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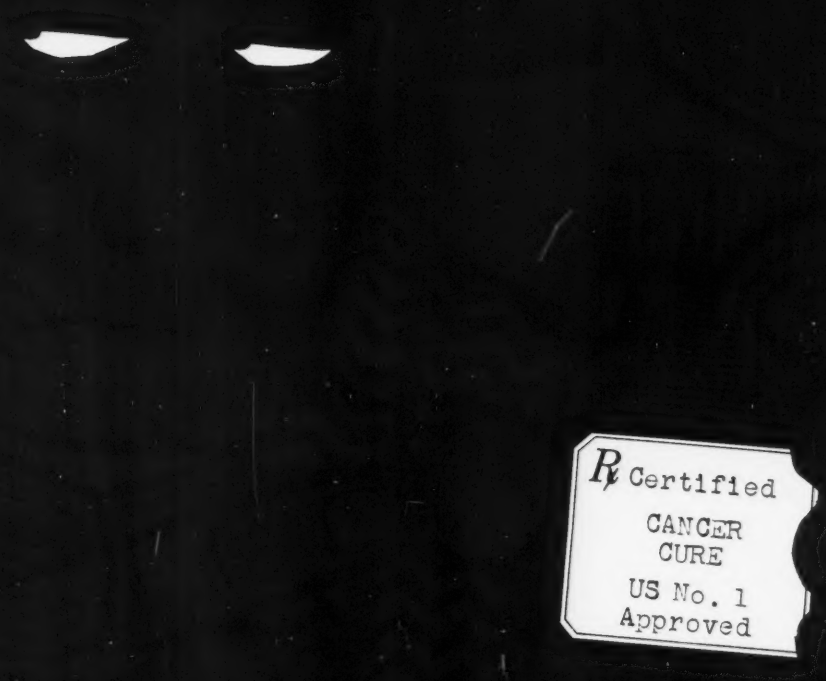

AMA attacks counterfeit doctors...

IN CERTAIN MENINGEAL INFECTIONS effective cerebrospinal fluid levels– effective antibacterial action

CHLOROMYCETIN®

(chloramphenicol, Parke-Davis)

In the management of certain meningeal infections, CHLOROMYCETIN offers unique advantages. It has been described by one investigator as "...the best chemotherapeutic agent for patients with *H. influenzae* meningitis...."[1] In comparative *in vitro* studies,[2] CHLOROMYCETIN showed the "highest effectiveness" against *Hemophilus influenzae, Diplococcus pneumoniae,* streptococcus, and numerous other pathogens. Another report states: "Chloramphenicol is regularly detected in the cerebrospinal fluid when blood levels greater than 10 micrograms per ml. are reached."[3] Blood levels of this magnitude are easily attainable with the administration of CHLOROMYCETIN by either the oral or parenteral routes.

CHLOROMYCETIN effectively penetrates the blood-brain barrier;[3-6] provides effective action against *H. influenzae*[1-4,7-9] and other invaders of the meninges.[5,7,10,11] Product forms are available for administration by the intravenous, intramuscular, and oral routes. For these reasons, CHLOROMYCETIN has contributed conspicuously to the dramatic drop in mortality rates in meningeal infections caused by *H. influenzae* and other susceptible microorganisms.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100. See package insert for details of administration and dosage.

Warning: Serious and even fatal blood dyscrasias (aplastic anemia, hypoplastic anemia, thrombocytopenia, granulocytopenia) are known to occur after the administration of chloramphenicol. Blood dyscrasias have occurred after both short-term and prolonged therapy with this drug. Bearing in mind the possibility that such reactions may occur, chloramphenicol should be used only for serious infections caused by organisms which are susceptible to its antibacterial effects. Chloramphenicol should not be used when other less potentially dangerous agents will be effective, or in the treatment of trivial infections such as colds, influenza, or viral infections of the throat, or as a prophylactic agent.

Precautions: It is essential that adequate blood studies be made during treatment with the drug. While blood studies may detect early peripheral blood changes, such as leukopenia or granulocytopenia, before they become irreversible, such studies cannot be relied upon to detect bone marrow depression prior to development of aplastic anemia.

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The New Inserts and Why

SINCE THE EDITORIAL which appeared in the September issue was written, the *Journal* has offered Blue Cross and Blue Shield and the State Department of Public Health an opportunity to alternately tell their stories through inserts to more effectively catch the eye and the interest of the reader. The first of these inserts appears in this issue. The need for explaining the reason requires some repetition which I hope will be understood and forgiven.

We are in a no-holds-barred struggle to prevent socialization of medicine. Emotional words are flung back and forth by both sides —silly business it is. Let us examine the situation today and take a careful look at the reasons for the *Journal's* interest in both of these entities.

THE COST OF COMMUNITY HEALTH

Prior to 1798 the cost of Community Health was nothing. It was not available and therefore could not be purchased at any price. The whole world lived in terror of smallpox, of plague, of cholera, of typhus and a host of other diseases in whose power we were. During the 18th century, 60 million people died of smallpox alone. While the deaths were recorded, the number left blind, crippled and deformed was not. A tiny inkling of what things were like is available to us if we but remember a few years back how terror struck our hearts when polio, like Hurricane Carla, hit the gulf coast and spread rapidly up through Texas into Oklahoma. In 1798 Edward Jenner gave the world a technique for preventing smallpox and preventive medicine took life. The sequence over one and a fourth centuries—matter from an active cowpox vaccination into the arms of the susceptible, costly, cumbersome and carrying the danger of inoculation of other diseases—to calf lymph in a capillary tube for a few cents, always available and entirely safe. This is our system at work.

Nothing much happened then until Lister recognized the significance of Pasteur's paper on fermentation sixty odd years later. With the work of Pasteur and Lister, antiseptic surgery came into being — again through prevention. By the early part of the present century we knew that mosquitos were the carriers of malaria and yellow fever and their breeding places were rapidly being destroyed or rendered harmless; we knew that typhoid, cholera and dysentery could be transmitted by contaminated water, milk and food and these necessities of life were being made safe by preventive medicine. Shortly we knew how to prevent typhoid, diphtheria, tetanus, whooping cough and now polio by techniques for active immunization—all preventive medicine. The community can obtain health—is is available. There remains much to be done in the field of preventive medicine—accidents, industrial hazards, the prevention of mental illness. Compare the cost of community health to the cost of sickness before this health became available.

THE COST OF MEDICAL CARE

This was very little in the 18th century—there just wasn't much of it—fomentations, blood letting, leeching, purges, emetics and the like. Surgery was dangerous but amputations and drainage of abscesses were necessary—part time jobs for barbers. Anesthetics were introduced in the 1840's. These made surgical procedures less painful but because of infection hardly less dangerous. The potential of the art and the skill of the surgeon could not be explored until Lister came up with the concept of antiseptic surgery for the prevention of infection. The cost of care began to go up because we now began to have medical care. Aseptic surgery followed but the surgeons were not really free to realize their potential in spite of improved anesthetics and anesthetic techniques until satisfactory means of treating infections appeared in 1936 with the sulfa drugs, followed shortly by penicillin, streptomycin, the broad spectrum antibiotics and chemotherapeutic agents for treating acid

fast infections. Today there is available a great deal of care and the cost is high. Radium and x-ray were not discovered until the 1890's. Only recently have x-rays become an indispensible diagnostic tool. Their use requires highly trained and skilled physicians, especially trained technicians and expensive equipment. The diagnostic tools that are available now and in the process of being developed are almost unbelievable. They require highly trained people for operation and interpretation. The surgeons are able to cure conditions always considered hopeless. The cost of care is going up and it will continue to do so. New and more and more costly equipment is being required along with personnel trained in its use. The nurse is at last emerging from the trainee supplying service at almost no cost and ending up as the hand maiden of the physician on bare existence pay, to the well educated, well trained young woman commanding a salary commensurate with the skill and responsibility required by her job.

CONCLUSION

The community is entitled to all the health available to it, and we, as physicians interested in health must actively support every reasonable effort to obtain it. We take community health for granted, raise hell if it breaks down but give no thought to the means and the people by which it is provided, let alone actively support the Department of Public Health in its effort to secure more and more health for us. We, in Oklahoma, even went so far as to use the boon of a technique for the community to prevent polio as a means of forcing people into the doctor's office. How stupid can supposedly intelligent people be? We must accept this right of the community and foster it in any way that we can. The *Journal* hopes that the inserts from the Department of Public Health will get over to the physicians the possibilities for community health and the means by which they can become realities.

The practicing medical profession's job is to provide care, being of course always mindful of opportunities to secure health for the patient. The cost of this care that we must and want to provide is going up because there is a great deal more of it now than formerly. There is no reason to apologize, people get much for their money. A change in technique of providing care from the present way to the socialistic way isn't going to make it any cheaper and is pretty apt to make it cost a great deal more, if to the cost is added a livelihood for a hell of a bunch of bureaucrats and political hangers on, as well as a new corps of secretaries and typists to fill out the forms.

The people, however, regardless of cost are going to have care. Since its cost is high and will go higher still, more and more people are finding it difficult to come by. Since the people are going to have it, this state of affairs could well lead to socialization in spite of our arguments to the contrary.

Fortunately for us and for people at the time that the cost of care began to go up rapidly, a technique for budgeting for costs by pooling funds under Blue Cross developed. This was of course for hospital care but was followed shortly by Blue Shield for physicians care. If Blue Cross and Blue Shield collapse, our defense against socialization collapses also. Even though we, the physicians and most people are opposed to socialized medicine, we and they are inclined to consider Blue Cross and Blue Shield as Uncle in the same way we would consider Uncle Sam as Uncle—let Uncle pay for it. As the cost of care goes up the cost of Blue Cross and Blue Shield is going up. Fortunately for people Blue Cross provides care, not dollars, and in this way for small increases in monthly payments from time to time, they are protected against rising costs. It is regrettable that Blue Shield does not also provide service rather than dollars. This is the weakest link in our defense against socialization even though it insures greater security for Blue Shield than Blue Cross enjoys because of its effort to meet rising costs.

If we are to survive, Blue Cross must do its job and stay solvent. With the inserts provided in the *Journal*, the profession knowing why, should learn how to help Blue Cross and Blue Shield solve their problems, and accept the responsibility that must be required of those who direct the utilization of the dollar set aside for health care by the guy who wants to pay his own way.—*B.H.N.*

Enforcement of the Medical Practice Act

The State Board of Medical Examiners is doing a very fine job in the matter of providing facilities for the issuing of licenses in the State of Oklahoma by examination and reciprocity. The usual mechanism seems adequate in this respect.

However, there is one area of extreme difficulty and frustration. This has to do with the fact that every now and then a person moves into Oklahoma and represents that he or she is licensed to practice medicine when such is not the case. It is literally impossible for the members of the Board to maintain a constant surveillance over all the state of Oklahoma. It is therefore suggested that each member of the State Medical Association should give due recognition to this situation and assist in the enforcement of the Medical Practice Acts. The method proposed is relatively simple.

1. There should be at least one doctor in each county or district in Oklahoma who would take a personal interest in determining the qualification of any new doctor.

2. He should refer to the offices of the State Board of Medical Examiners (580 Home State Life Building, Oklahoma City 3) to determine whether or not the doctor is actually licensed in any category of the Healing Arts.

3. If he is licensed as a medical doctor he should be interviewed and made welcome and invited to apply for membership in the county or district society.

4. If he is licensed in some other category of the Healing Arts he should not be molested.

5. If he has no license of any sort then the county attorney should be so informed with the request that some action should be taken.

The matter of timing is of utmost importance and if the person is unworthy to be called doctor he should not be permitted to remain in the community long enough to establish extensive acquaintance and friendship. Each day this continues produces increasing difficulty in arranging any sort of disciplinary procedure.

Your interest is cordially solicited.

Clinton Gallaher M. D.
President

OSMA JOURNAL/scientific

Craniofacial Dysostosis Crouzon's Type

JOE N. MASON, M.D.

A review of the literature and presentation of an additional case of Crouzon's disease, in which the disease encompasses five generations.

MALFORMATIONS of the skull and face associated with ocular symptoms have been reported since 1866.[1] In 1912, Crouzon presented a paper describing two patients—a mother and her son. He gave the name "Hereditary Craniofacial Dysostosis" to the syndrome exhibited by these two, and characterized by a cranial malformation that is a combination of a skull in the shape of a boat and in the shape of a wedge; malformation of the face resulting in an arched nose resembling a parrot's beak; marked protrusion of the mandible beyond the maxilla; bilateral exophthalmous and external strabismus; and a hereditary and familial occurrence of these malformations.[2]

This malady is rare. There appears to be no sex linkage because these malformations are seen in both sexes with approximately equal frequency. There is evidence that with progressive generations the disease assumes a more severe form.[3]

The exact cause of Crouzon's Disease is not known. Many theories have been advanced over the years. At different times, tuberculosis, syphilis, rickets, endocrine disorders, cranial osteitis, and systemic and metabolic disorders have all been incriminated. Now there is agreement that this disease is not due to any of the above. Lokey noted in six cases of children with Crouzon's Disease that they seemed improved both physically and mentally while on daily therapy with thyroid.[4] Serum cholesterols were within normal limits in all these. Wickes presented a case of an abnormally developed infant delivered of a mother who had received insulin shock therapy during the second month of gestation. On reviewing the literature of children delivered from mothers who had received similar therapy he found one additional case of an abnormally developed infant, and many macerated stillborn infants. His conclusion was that shock therapy prior to ten weeks gestational age was likely to cause abnormal development of the fetus.[5]

Russell presented five cases of craniofacial dysostosis with associated anomalies, which had evidence pointing to an intrauterine cause for the malformation. Three of the five had been complicated by threatened abortion during the first trimester of pregnancy. These three with one additional case all had "very small" infarcted placentae.[6] Bleeding during the sixth and seventh months of pregnancy was reported in the prenatal history of the mother of the case herein reported.[7]

The original description by Crouzon included a hereditary and familial occurrence of this disease. Dodge, however, states that an hereditary or familial element is not present in all cases of Crouzon's Disease.[2] One-fourth of reported cases occur without a family history so these are called "sporadic craniofacial dysostosis."[2] Other authors concur with this.[8]

The majority of authors believe that Crouzon's disease is hereditary. Schiller presented a case with 12 siblings, five of whom had the disease.[2] Pinkerton and Pinkerton present four cases occurring in one family and they believe it is an hereditary disorder,[10] as does Krause, et al.[1] Lake, et al.,[9] as well as Flippen[7] conclude that it is an hereditary manifestation, being a dominant trait. Most of the reported cases are in the European literature, and Krause states that most patients described are of French stock. Others believe there is no racial or sexual predilection.[11]

The craniofacial distortion is the result of premature closure of suture line. Normally these membranous bones do not fuse until the third or fourth decade, however the margins are interlocked by six to 12 months.[10] It has been theorized that the reason for premature closure of the sutures is a defect primarily of the interstitial mesenchyme which normally separates the skull bones in their suture lines.[7, 11] It has also been classified as a defect of the mesodermal anlage of the bones of the base and sides of the skull.[1, 11]

Many associated anomalies have been reported. In Crouzon's original case, the child also suffered from epilepsy and urinary incontinence. Two of Dodge's patients had associated syndactylism, as have others.[11] Lokey reported two cases with associated congenital heart anomalies.[4] Complete nasal obstruction with bilateral complete choanal atresia has been reported.[12]

The most commonly associated findings

Figure 1. T.M., age 6 days.

are related to the central nervous system, including the eyes. Pinkerton, et al., believe that the severity of the signs and symptoms depend on the time of synostosis of the sutures. With the sutures closing earlier, the symptoms and findings are more marked.[10] These patients may or may not be mentally defective. Russell presented five patients with normal intelligence.[6] Lokey, on the other hand, reported six patients with severe mental retardation, recording I.Q.s ranging from 36-56. Schiller had three children with grossly normal intelligence and two with mental deficiency.[3] It is logical to assume that with early closing of the sutures and the resulting increased intracranial pressure, there will be some loss of brain substance.

With the orbital changes, exposure keratitis is very common. Also, due either to orbital bony changes or increased intracranial pressure, blindness with optic atrophy is a common sequel. Most authors believe that the optic atrophy is secondary to papilledema, however it may be due to mechanical stretching of the optic nerve.[1, 9]

Surgical prevention of increased intracranial pressure is the treatment of this malady. Early surgical intervention seems logical to decrease the central nervous system hypertension, and it is thought that the inevitable complications of this condition are usually preventable.[9, 11] Operation is recommended as early as six months of age.

Pneumoencephalography is indicated in all patients with Crouzon's Disease for a better interpretation of the seriousness of their

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disability. Contraindications to operation include extremely large ventricles, porencephaly, marked brain abnormalities, severe mental retardation or complete blindness.[2] Indications for craniotomy are: 1. Progressive exophthalmos, progressive optic atrophy or evident diminishing visual acuity. 2. Progressive mental deficiency. 3. Simple increased intracranial pressure with or without any of the above symptoms. 4. Cranial deformity and x-ray evidence of digital impressions in the skull with no clinical evidence of increased intracranial pressure.[2, 10] For the specific ophthalmologic problems of external strabismus and exposure keratitis, corrective muscle operations and lateral blepharoplasty are recommended.

CASE REPORT

T.M., white male, was delivered May 8, 1960 by caesarean section because of cephalopelvic disproportion. The prenatal course was uneventful. One month prior to delivery, roentgenograms of the mother's abdomen revealed a definitely abnormal fetal skull with the possibility of encephalocele. Physical examination at the time of birth revealed severe malformation of the fetal head. The remainder of the body appeared to be completely normal. There were spontaneous respirations. The birth weight was eight pounds, three ounces.

Examination of the head showed a striking bilateral exophthalmos, which required suture closure of the right eyelids. The skull was a combination of scaphocephaly and trigonocephaly with characteristic anterioposterior flattening and increase in transverse diameter. The superior portion came to a point which was extremely hard. There was noted an outpouching bilaterally posterior to the zygomatic arches over which no bone was palpable. There seemed to be a greater than normal distance between the eyes with the upper portion of the nose flattened and broad. No bone was noted around the lateral borders of the orbits. The remainder of the nose was "beak-like." Already prognathism was evident with a large mandible and small maxilla. The tongue seemed larger than usual. The patient could

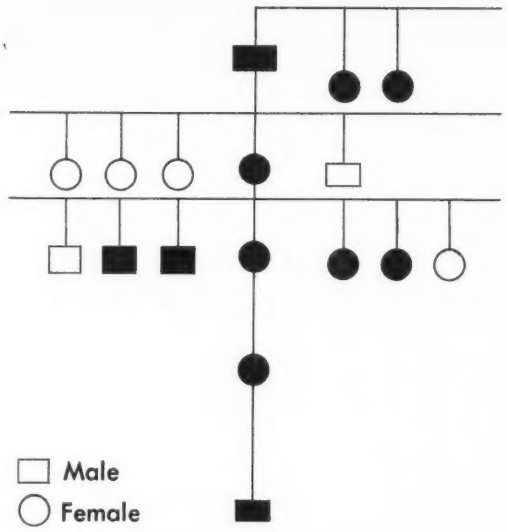

Figure 2. Family Tree. Square symbols represent male members, female members are represented by circles. Solid symbols represent those affected with this disorder. The open symbols represent non-affected members. The five generations that were known to have this disorder are represented.

appreciate light in both eyes shortly after birth. The remainder of the physical examination was that of what appeared to be a healthy male infant. (See figures.)

The neonatal course was uneventful except for ocular difficulties. Occasionally the right eyelid would close behind the eyeball. The patient was dismissed with its mother on May 15, 1960. This patient was followed in the out-patient department, being first seen there on May 27, 1960, at which time he was apparently doing well except for beginning development of exposure keratitis. He was seen again June 9, 1960, when it was noted the bilateral exposure keratitis was more severe. At this time it was doubted if the infant had vision in either eye. The patient was readmitted to the hospital on June 15, 1960, with diarrhea and dehydration, associated with salicylate intoxication. Despite all medical efforts the child expired two days later on June 17, 1960. A post-mortem examination was done and the final diagnoses were:

1. Crouzon's Disease—craniofacial dysostosis
2. Bilateral temporal encephalocele
3. Marked internal hydrocephalus
4. Bilateral panophthalmitis

5. Acute tracheobronchitis and bilateral bronchopneumonia

COMMENT

The evidence, though not conclusive, favors an hereditary or familial nature in Crouzon's disease. The aforementioned case certainly concurs with this. The pedigree of this infant was presented by Flippen in 1949.[7] In his excellent article he described four generations in this family afflicted with the disease. I have found no article with more than four generations present. With this report, a family of five generations is presented, in which the same physical findings were noted. The mother of this infant seems to have grossly normal intelligence, as does the grandmother and great-grandmother, all three of whom I have interviewed personally. In this family there is a marked increase in abnormal physical findings with succeeding generations. Members of the last generation are by far the most severely involved physically. No intellectual assays were attempted on this child but with the profound physical changes in his calvarium some degree of mental deficiency was surely present. In this family it certainly appears to be a dominant trait.

The complete history of the remainder of this family is not known, but many of the offspring from this grandmother's siblings have this disease. This fact strongly supports the hereditary aspects of the disease. This family also supports the contention that progressive generations are more severely involved.

SUMMARY

1. On review of the literature, Crouzon's Disease is apparently an hereditary disorder, with no sexual predilection.

2. The treatment of this disorder is surgical prevention of increased intracranial pressure, by which means it is thought the mental deficiency and blindness associated with the disease can be prevented.

3. An additional case report is presented, in which the disease involves five generations. □

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No Pay For Polio Care

The National Foundation changed its policy in 1959 by discontinuing payment for professional services rendered to patients with acute or residual paralytic poliomyelitis. Since many local NF chapters had previously been paying for such service, the change in policy has caused some confusion.

Patient aid policies of the foundation are now based on the concept that the economic burden of such catastrophic illness may best be alleviated by assisting with ancillary costs of lengthy hospitalization and by offering aid to economically distressed families of such patients. Moreover, the National Foundation believes its withdrawal from providing professional care will eliminate any misunderstanding about the traditional patient-physician relationship.

Use of Radioactive Isotopes in a General Hospital

THOMAS R. COX, M.D.

The use of radioactive isotopes enables the general hospital to assay metabolic processes otherwise difficult or impossible to explore, and to evaluate the normality of many of the body's organs and functions.

THE ADVENT of readily available, pharmaceutically prepared radioactive tracer elements has brought the use of radioisotopes and isotope labeled compounds within the scope of any general hospital, regardless of size. The first and most important requirement for their use is a physician who is interested in the use of radioactive material and will take the training required to obtain an AEC license and give the time required to run a properly regulated isotope laboratory.

The second requirement is a relatively modest outlay to the hospital for a scintillation tube for external counting of patients and standards, a well counter for use on blood, plasma and other liquid samples, and a scaler for recording the number of impulses from the sample. A preferable, but considerably more expensive item, can be a gamma ray spectrometer which lowers background to minimal limits by focusing on the actual energy spectrum of the emissions of the radioactive material.

THYROID FUNCTION AND THERAPY

One of the most valuable and frequent uses of the isotope is in the evaluation of thyroid function. The isotope tests, together with the chemical protein-bound iodine, have almost completely replaced the BMR and cholesterol as measures of thyroid function in most institutions. The following tests are those which are commonly utilized for thyroid function.

(1) *I^{131} uptake.* Sodium I^{131} is given as a capsule, or liquid, by mouth. External throat counts are done on the patient from three to six hours after administration and at 24 hours. The percentage uptake of the thyroid gland can then be calculated by direct comparison with a standard. Normally, the thyroid should take up between ten per cent and 45 per cent of the administered dose within the 24 hour period. The uptake of the thyroid gland is interfered with by any of the thyroid depressant drugs such as propylthiouracil, Tapazol, and related compounds; by exogenous sources of iodine such as Lugol's solution, iodide containing cough medicines, or long lasting radio-opaque iodine containing dyes such as those used for gall bladder and renal studies. There are other drugs, ordinarily not considered by the clinician, which interfere with the uptake. These include sulfa drugs, hormone

preparations (including both thyroid hormones and sex hormones), some of the tranquilizer groups, and certain vitamin preparations. The length of time which must elapse after administration of these drugs before an I^{131} uptake can be considered reliable varies with the individual medication.

(2) *Protein-bound iodine conversion.* Concurrently with the radio-active uptake it is advisable to run a protein-bound iodine conversion test. By measuring the total activity of I^{131} in the serum at 24 hours and then removing the inorganic iodides by filtration through a special resin and again counting the serum, one can get a percentage of the circulating iodine that has been converted to organic iodide. This is a very valuable test and will often make the diagnosis of thyroid disease possible, even where some interfering medication has partially blocked the thyroid gland. With the PBI conversion and uptake together, a diagnostic accuracy of close to 100 per cent can be achieved. It was formerly thought that the PBI conversion was not much help in hypothyroidism but with the use of improved resin, hypothyroidism can be accurately diagnosed. The normal conversion is 13 to 43 per cent.

(3) *PBI I^{131} plasma levels.* In a patient who has circulatory or renal incompetence so that the excretion of inorganic sodium iodide does not go on at a normal rate, one might find the PBI conversion falling into hypothyroid range due to excessive amounts of circulating radioactive sodium iodides. In order to eliminate this source of error, a 48 or 96 hour specimen may be taken. At this time all inorganic iodides will have been completely excreted and the calculation of the circulating I^{131} divided by the administered dose per liter of plasma gives a percentage figure which reflects a high degree of diagnostic accuracy. The normal range is 0.26 - 0.27 per cent.

(4) *Scanning of the thyroid.* Although most smaller hospitals would probably not wish to purchase a scanner, a scan of the thyroid after administration of the diagnostic dose can give information on the amount of activity present in any nodules palpated in the thyroid. This, of course, is helpful in differentiating toxic nodules and cold nodules which might represent carcinoma.

(5) *T^3 uptake.* Recently a new in vitro test has been designed for measuring thyroid function using radioactive labeled Tri-iodothyronine. In the presence of increased circulating protein-bound thyroid hormones, red cells will absorb greater quantities of the radioactive labeled T^3 so that by measuring the activity of a specific sample to which radioactive T^3 has been added, then washing the cells and measuring the radioactivity remaining on the red cells, we are able to give a reliable report of thyroid function. The main values of this test lie in the fact that it is not interfered with by circulating inorganic or organic iodides, and the serum may be sent in from a distance to the isotope laboratory without the patient having to make the trip. It is also of value in children, adolescents, and in pregnancy where one may not wish to administer radioactive material.

(6) *Therapy.* The therapeutic use of I^{131} in the treatment of hyperthyroidism, angina pectoris, and intractable heart disease has become more and more frequent in recent times. For the hyperthyroid patient, it offers a monetary saving, greater rapidity of results than other type medication, and where this treatment has been adequate, there is no recurrence. The recurrence of toxic goiter after surgical removal is in the neighborhood of 25 per cent. The only drawback is in the administration of radioactive substances in children, adolescents, and pregnant women and the fact that a small percentage of patients go on to a hypothyroid state. However, the percentage of hypothyroidism in competent hands is no greater than that following surgical removal. The theoretical concept of development of thyroid cancer following the administration of ra-

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dioactive I^{131} has not, after these many years of utilization, proven valid in a single reported case, nor has the administration of equivalent doses in animals produced carcinoma of the thyroid.

HEMATOLOGIC DIAGNOSIS AND THERAPY

The radioactive materials have found a great deal of use in the field of hematologic diagnosis as well. In this field it can make or confirm diagnoses which would otherwise be obscure, and measure metabolic pathways which would otherwise be almost inaccessible.

(1) *Schilling test for pernicious anemia.* Pernicious anemia is one of the diseases which we very seldom see in its pure form due to the widespread use of multiple vitamin compounds containing folic acid and liver and the use of multivitamin and liver injections in physicians' offices. For this reason, the diagnosis of pernicious anemia from the hematologic standpoint is often difficult. By the use of Vitamin B_{12} which is labeled with radioactive Cobalt, a diagnosis of pernicious anemia can be made in spite of any previous medication. Instead of several months being required for the previous medication to lose effect, this test can be performed within 48 hours of the last medication. The technique of the test is the administration of a capsule of radioactive B_{12} labeled with .5 of a microcurie of radioactive Cobalt. (This may be $Cobalt^{57, 58 \text{ or } 60}$. The trend is to the use of $Cobalt^{57}$ because it gives a better count on a gamma ray spectrometer and administers less of a radioactive dose to the liver.) One hour following the administration of the radioactive Cobalt on an empty stomach, the patient is given 1000 micrograms of Vitamin B_{12} as a flushing dose. The urine is collected for 24 hours and the percentage of excretion of Vitamin B_{12} is measured. If ten per cent or more of the radioactive B_{12} is excreted, the patient is able to absorb B_{12} normally and does not have pernicious anemia. If less than four per cent is excreted the patient has pernicious anemia or a malabsorption syndrome. By repeating the test, with the administration of intrinsic factor and B_{12}, we can differentiate a true Addisonian pernicious anemia from a malabsorptive syndrome. In the true pernicious anemia, the B_{12} excretion will triple or quadruple and fall in normal limits. Those patients who fall in the borderline range between four and nine per cent on the initial test usually do not have pernicious anemia, but should be repeated with intrinsic factor to verify the diagnosis.

(2) *Red cell survival studies.* In the diagnosis of hemolytic anemias and other diseases where there is a shortened red cell survival time, the administration into the circulation of red cells labeled with $Chromium^{51}$ enables us to tell how long a time the patient's red cells are surviving. The technique usually is to take the patient's own red cells, or Type O cells from a donor, label these with $Chromium^{51}$, and inject them into the patient's circulation. Twenty-four hours later a blood sample is taken to use as a standard, and then multiple specimens are taken at intervals of days to a week thereafter until there has been a disappearance of 50 per cent of the radioactivity from the peripheral blood. The half time of survival of normal cells is 22 to 26 days. By external counting over the spleen and measuring the amount of $Chromium^{51}$ present in this area, it can be determined whether the red cells are being destroyed there and a diagnosis of hypersplenism can be confirmed.

(3) *Radioactive $Iron^{59}$ studies.* By the use of radioactive iron employed as a chloride or citrate, we can determine several things of value. First, after injection of a specific amount of $Iron^{59}$, we can measure its clearance rate from the plasma. This is accelerated in polycythemia, leukemias, anemia and iron deficiency anemias and increased in aplastic bone marrow conditions. Second, we can determine the ability of the gastrointestinal tract to absorb iron by giving the dosage orally and measuring its appearance in the blood. Third, we can measure the incorporation of the radioactive iron into the red blood cells and in this manner measure the ability of the patient to form hemoglobin. About 85 per cent of the intravenously administered dose should be incorporated in hemoglobin in ten days, and if it is below this percentage, it would indicate a defective utilization of iron in the

formation of hemoglobin.

(4) *Therapy.* Radioactive Phosphorus^{32} can be very useful in the treatment of polycythemias and some chronic leukemias, but there is no sensitivity to Phosphorus^{32} where sensitivity to x-ray is not also present. For this reason, it is saved primarily for use in polycythemias.

MISCELLANEOUS

(1) *Studies of blood volume.* Studies of blood volume, which are of great interest to the surgeons during major procedures and on occasion to the internists, have always been notoriously unreliable with the older techniques. With the use of radioactive I^{131} labeled albumin or Chromium^{51} labeled red cells, a fast, accurate blood volume can be determined.

(a) *Radioactive labeled albumin blood volumes.* Ten to 20 microcuries of radioactive iodine labeled albumin is injected into the circulating blood and after ten to 20 minutes, a sample of blood is taken from the other arm. By counting the radioactivity in this sample as compared to a standard, we are able to determine within ten per cent, or less, error, the total circulating blood volume. By separating the plasma and counting this, the plasma volume can be determined. By subtracting the plasma volume from the total blood volume, the red cell volume can be determined and by simple division, the hematocrit is calculated. This test can be repeated as often as is necessary before, during, and after operation. It is also of use in determining the blood volume in questions of polycythemia vera or other disease such as stress syndromes which would alter blood volume.

(b) *Chromium^{51} blood volume.* A measured quantity of washed red cells labeled with Chromium^{51} is injected intravenously and after ten to 20 minutes a sample of blood is taken from the other arm. By counting this sample as compared to a standard, the total blood volume can be calculated. This procedure has been greatly simplified by the introduction of a small plastic coil, which fits into a well counter and in which both the standard and the patient's blood can be counted. By the use of Risa and Chromium^{51} labeled cells, a plasma volume and red cell mass may be measured simultaneously.

(2) *Gastrointestinal bleeding.* The diagnosis of gastrointestinal bleeding can be made by administration of 200 microcuries of Chromium^{51} on red cells and following the daily amount of radioactive material excreted in the stools.

(3) *Fat absorption studies.* The diagnosis of sprue and other sprue-like malabsorption syndromes, as well as pancreatic diseases such as cystic fibrosis, can readily be made by the use of radioactive lipids such as Triolein and fatty acids such as oleic acid labeled with I^{131}.

After blockage of the thyroid for several days with the administration of Lugol's solution, a measured dose of Triolein labeled with I^{131} and usually between 25 and 50 microcuries of radioactivity is administered orally to the patient in a fasting state. Blood samples are then taken at three, four, five, and six hours and the percentage of absorption of the Triolein can be calculated by reference to a standard, which is supplied with the radioactive Triolein. The peak of absorption should be from three to four hours and at this point, ten per cent of the administered dose should be in the circulating blood.

If the test is abnormal using Triolein, one must differentiate between the absence of pancreatic enzymes and the failure to absorb fatty acids. By repeating the same procedure and administering oleic acid labeled with I^{131}, the absorptive ability of the gastrointestinal tract is measured for fatty acids. If sprue, Whipples' disease or other types of malabsorptive disease is present, then absorption will be normal. If the previous abnormal result was due to absence of pancreatic lipase, such as in cystic fibrosis, the results will be normal with the fatty acid.

A second method of performing this test, but somewhat less desirable, is the collection of stool specimens for three to four days following the administration of the radioactive dose and a measure of the amount of radioactive fat excreted.

(4) *Measurement of exchangeable sodium and potassium or sodium and potassium space.* By the use of radioactive Sodium^{24} or Potassium^{42}, the total exchangeable sodium

of the body, as well as the sodium or potassium space can be determined. The procedure for this is primarily the injection of the radioactive elements and measurement of the amounts of material excreted in the urine. These are of great advantage in handling selected electrolyte problems.

Almost daily we are finding more and more ways of studying human metabolism by use of radioactive labeled compounds. The study of *renal functions* is one of the newer tests coming into popularity. *Hepatic function* studies have been utilized for several years. A tracer dose of radioactive material can help in *tumor localization,* or in the differentiation of aneurysms from tumor masses. Radioactive assays of circulation time and cardiac output are among the newer tests. Radioactive tracer doses in diagnosis, particularly in the *diagnosis of metabolic disorders,* is becoming more and more common in hospitals of all sizes throughout the nation. The minute amounts of radioactive material used are, for the most part, rapidly excreted and do not subject the patient to any dangerous amount of radioactivity.

It is beyond the scope of this paper to go into detail on each and every one of these uses, and I have included herewith only those tests which are most commonly used in hospital practice.

In *summary,* we have a large group of tests using radioactive tracer elements which enable the physician to make faster and more accurate diagnosis at a very reasonable cost to the patient, and which enable us to explore metabolic pathways previously only studied with great difficulty. □

Hillcrest Medical Center, Tulsa Oklahoma

Diabetes Detection and Education Week

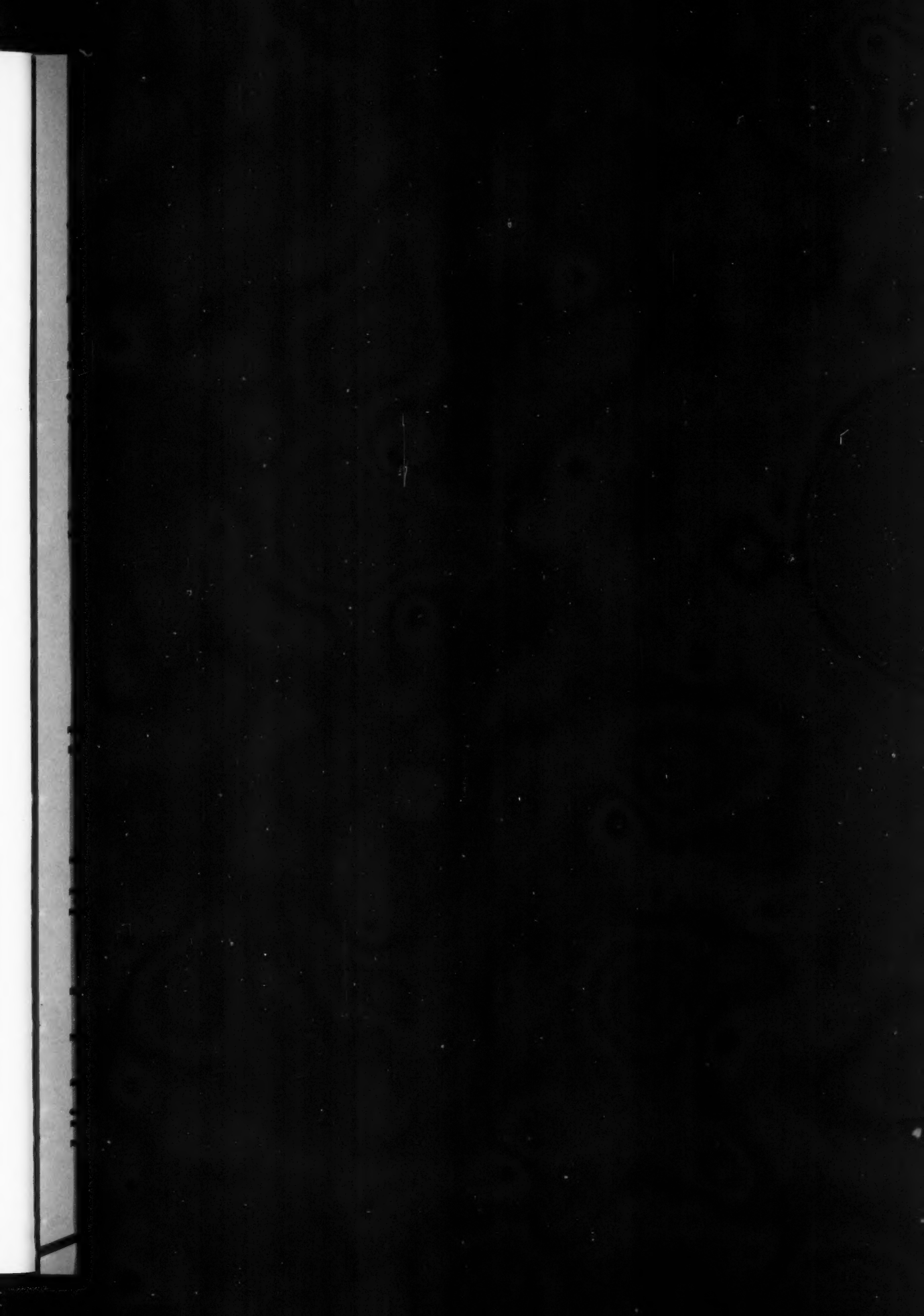
Diabetes, seventh in the list of causes of death by disease, affects 2,750,000 Americans—about one-half of whom do not know they have it! It's a national problem of increasing magnitude.

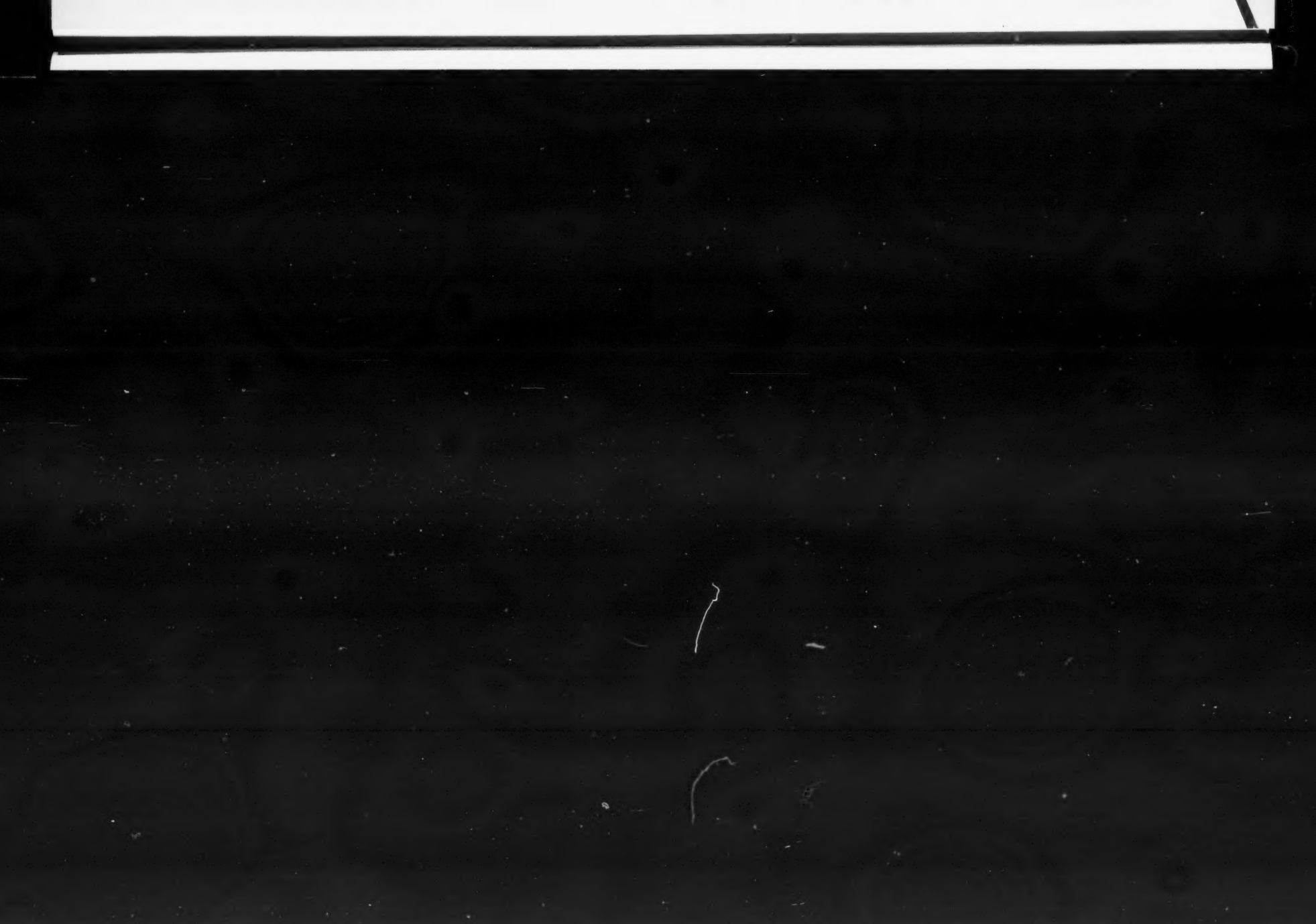
Diabetes Week, sponsored nationally by the American Diabetes Association, is not a fund-raising campaign. Its two-fold purpose is to identify those hidden diabetics and to acquaint all Americans with the symptoms of the condition.

The detection phase of the program is a primary responsibility of county medical societies, whose physician-members, regardless of specialty, are urged to test their patients during this important drive. Not only should medical groups cooperate in Diabetes Detection and Education Week, but individual physicians should make it a policy to test each patient at least once a year—one out of every 140 of them as unknown diabetics!

The American Diabetes Association is furnishing promotional, educational and testing materials directly to county chairmen. Local medical societies and the AMA have long recognized the worthwhile principle of this program—now let's take advantage of the materials offered us and put the principle to work!

HUGH JETER, M.D.
Chairman, Committee on Diabetes
Oklahoma Chapter, American Diabetes Association





published by oklahoma blue cross - blue shield, here's.....

..... a memo from and

OCTOBER, 1961

A STRANGE PARADOX

"It's hell if I do.....and hell if I don't", said this physician as we drank coffee in the hospital cafeteria. "You want me to keep 'em out of here, and the administrator wants me to fill the place up! I wish somebody would make up his mind, Carl."

Well, I knew how he felt, and he's not the first physician to express the thought.... even though he said it more colorfully than most. Naturally, the whole subject of prepayment, public pressures and the management of cases seems to be a doctor's dilemma. Maybe it's because we all tend to over-simplify issues and decisions. However, with that danger clearly in mind, I'd like to take a "swinging try" at clarifying the problem and delineating responsibilities.

To reduce Blue Cross' financial fate to its basic tenets, it depends on three controlling factors: (1) the *number* of members hospitalized, (2) the *length* of time they stay, and (3) the *cost* of care at that hospital.

No one has ever denied that physicians have at least *authoritative control* over *who* gets into the hospital and *how long* they stay. Nor has anyone ever denied the presence of all kinds of patient, family and socio-economic pressures on the physician to influence his decisions. However, his authority is unquestioned, and therein lies the crux of prepayment's troubles.

The rate-of-admission is so important because nothing happens to Blue Cross (except for small out-patient benefits) *until* a member is admitted to a hospital. Neither the length-of-stay nor the cost of the care matters until there is an admission. So let's just take this one factor and look at it closely.

This statistical factor is stated in terms of Blue Cross "admissions per thousand members", thus eliminating the influence of fluctuating total memberships in an area. Briefly, it's this:

	1956	*1960*
All (86) Blue Cross Plans	135 per thousand	139 per thousand
Oklahoma Blue Cross	147 per thousand	161 per thousand

Beside the obvious greater *percentage in rise* in Oklahoma, it's also quite evident that we're running almost 16% higher than the national average. Why?

In searching for some reasons for Oklahoma's sudden jump in admissions, the *availability* of hospital beds in the state is certainly a statistic to be scrutinized. Back in 1956, our 151 Blue Cross Member Hospitals in Oklahoma had 7,102 beds available. Last year, our 153 hospitals had 13,477 beds! The small rise in total hospitals is due to the fact that privately-owned hospitals are being replaced by community-owned ones. The large gain in beds is due to wing-additions to existing hospitals and the completion of some rather large new ones, i.e. Baptist Memorial, Saint Francis. The medical and lay population have remained practically static in that same period of time; so the theorem that a "vacuum tends to fill itself" is not inappropriately applied to additional hospital beds. Of course, this trend, projected to the coming years, makes it obvious that prepayment *must* inevitably become more and more expensive to support the increasing use of hospital beds. This is not to say that adequate hospital facilities should decrease or not be made available to the people of Oklahoma. Apparently, they are still on the increase, and with the full awareness of the general public. For instance, plans have been made for at least one hospital in each county. Needless to say, federal subsidies have had a great influence on this rapid building program.

The *presence* of a hospital bed is at the base of a "vicious circle" of hospital economics. Its original and complete cost-to-build today approaches $22,000 each. Its average operational cost currently in Oklahoma is $26.32 *per day*. Thus, once beds are built, their *occupancy* thereafter has a tremendous effect on their cost to maintain. When the occupancy of a hospital is low, the hospital's stand-by cost of daily operation generally remains the same. However, the income from patients drops, and each bed's *actual* cost increases. When a hospital's occupancy runs 80-86%, its actual cost per bed is at its most realistic level.

Thus, there emerges the paradox that a nearly-full hospital runs at an efficient cost of operation, and a nearly empty one costs more than necessary. So a high admission rate seems desirable, doesn't it? Well, it certainly is, IF the *number* of available beds remains *static*. But, alas, the number still increases.

Do physicians have any influence in convincing communities of their need of hospital facilities? Do they have any influence over the facilities, staff, and equipment in hospitals? Do the locations of physicians throughout the state have any correlation with hospital construction? The answers to these questions are obvious, but their *importance* is all too often overlooked in the total picture. The role of every physician in *all* of medical economics goes far beyond individual "fees for services" to the public. It goes beyond his office, his town, and his state.

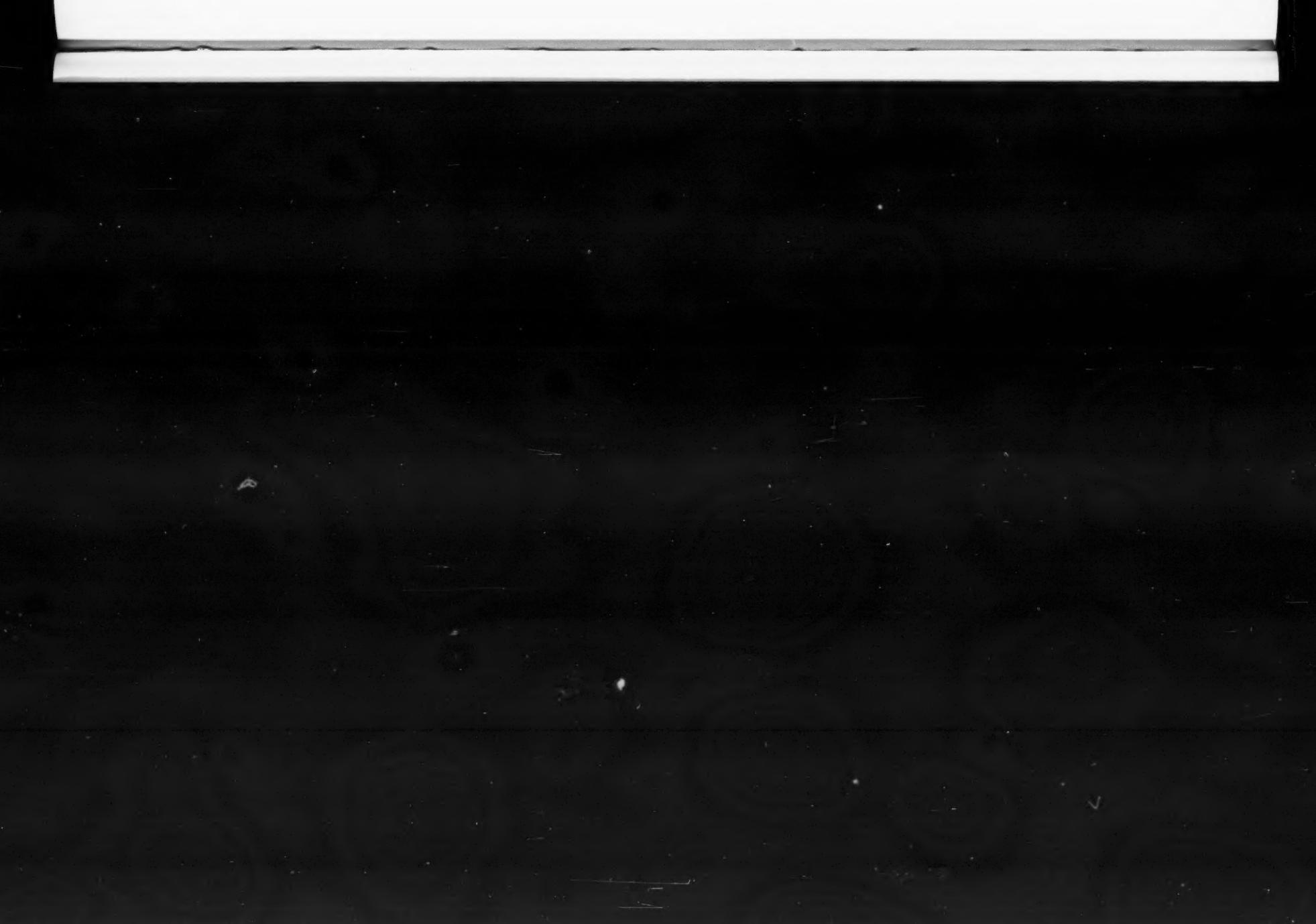
But back to my coffee-drinking friend in the hospital cafeteria. "I see what you mean, Carl, but I'll never convince my colleagues....." To that I reply "Thanks for listening. If I've *really* made you think, you'll help me with the others."

We've analyzed only one facet of a problem this time: the rate of admission. This seemed the logical place to start the analysis. The figures I've quoted are *total* in-patient admissions. There are sub-surface details of those figures, such as: 7% of our Oklahoma members were hospitalized outside the state, the 20% higher rate of admission for Non-Group members versus Employed Group members, and how the differential is built into the dues structure. I'll be glad to furnish those details to anyone interested or devote a future article to them. Statistics are tricky to write about.....too few are dangerous.....too many are either confusing or boring.

In our next article we'll analyze the *types of admissions by diagnoses*. There are some interesting trends developing in that respect.

Sincerely,

Carl Bebla



Emergency Gynecologic Lesions That May Confront the General Surgeon

JOSEPH HYDE PRATT, M.D.

Emergency gynecologic lesions may be as catastrophic as any in surgery, necessitating attention to details in diagnosis and treatment to prevent overwhelming blood loss, most errors in diagnosis of these lesions being due to omitting or overlooking routine procedures.

A COMPLETE DISCUSSION of gynecologic lesions requiring emergency treatment would include most of the disorders that bring young adult women into the physician's office. In this paper I shall mention many conditions but discuss only a few of the commonest in detail. I want especially to emphasize those that the general surgeon is most likely to see. Some of the cases, of course, have a fantastic turn, such as the girl who calls a doctor on the telephone and excitedly says, "Doctor, there's something in my vagina. What should I do?" The object could be almost anything, but it turns out to be a Tampax** with a broken string. Some gynecologic emergencies, on the other hand, are as important and life-threatening as any encountered in general surgery. They require immediate attention and consideration.

A woman complaining of abdominal pain may present herself at any physician's office. She can be any age but usually is a young adult, since this is the age when the greatest variety of emergency gynecologic illnesses occur in women. The initial evaluation is most important, for some gynecologic emergencies require immediate treatment while others do not. Such papers as Carrington's[1] on diagnostic errors in 1932 patients presenting emergency gynecologic lesions and Marchetti's[2] on ectopic pregnancy have repeatedly pointed out the high percentage of wrong diagnoses. Snyder and Chaffin,[3] in a general discussion of differential diagnosis, suggested possible ways to approach the problem. Although one should make every intellectual effort to establish the specific, correct diagnosis, it is most important to recognize the need for an emergency operation when it is encountered and to be prepared to do something about it.

The errors made in preoperative diagnosis are generally not so much errors relating to knowledge or ability as to omissions or faulty judgment, such as overlooking some detail of the history or pelvic examination, or omitting the rectal or vaginal examination.

Correct management of acute abdominal disease requires a careful, complete, accurate history of the onset and course of the immediate illness. In fact, attention to detail in taking the history and performing the physical examination is the most important step one can apply to the problem. Patients with twisted cysts, ruptured ectopic pregnancies, perforated ulcers, ruptured corpora lutea, or acute appendicitis may look much alike; but symptoms of acute appendicitis generally start centrally and localize laterally, those of perforated ulcer usually start with sudden epigastric pain, and those of a twisted cyst may begin suddenly in one lower quadrant and the patient may give a history of several similar episodes. Symptoms of a ruptured ectopic pregnancy or corpus luteum start suddenly but differ in that they rapidly become catastrophic in the former and

*Read at the meeting of the Oklahoma State Medical Association, Tulsa, Oklahoma, May 7 to 9, 1961.
**Tampax, Inc.

become less severe in the latter, the greatest pain occurring early. Don't be trapped by the obvious—just because the patient has a hernia that is tender is no reason to skip a decent history; she might have an acute or gangrenous appendix lying near the neck of the hernial sac with purulent material draining into it.

Such serious accidents as abruptio placentae and rupture of the uterus and other conditions associated with pregnancy at term are excluded, because the patients involved will be under the care of an obstetrician. They are his responsibility. The general surgeon also would not have to contend with the uncommon rupture of a uteroovarian vein at term. Berger and Hill[4] reported two cases and referred to 75 others with an over-all mortality rate of a startling 50 per cent and a 75 per cent mortality rate if the rupture occurred during delivery. Postpartum hemorrhages are also in the field of the obstetrician.

APPENDICITIS

Appendicitis should be mentioned first in every discussion of acute abdominal disease, because it is the commonest lesion and because proper handling can keep the mortality rate low. Bolman and co-authors,[5] for instance, reported on 391 consecutive patients who survived rupture of the appendix. When any acute gynecologic condition is suspected, appendicitis must be considered if only to be excluded. Appendicitis occurring in the age group that is most likely to have acute gynecologic complaints follows a well-recognized pattern. Typically, parumbilical pain occur at the onset. The occurrence of fever, vomiting, or any other symptom before the pain should make one suspect the diagnosis. Nausea and vomiting usually begin after the onset of pain. The localization of pain is even more typical: within a few hours, the central, perhaps vague abdominal pains should shift and become localized in the right lower quadrant as they become more severe. Regardless of the location of the appendix, the character and shift of the pain are most characteristic.

The young teen age girl brought in by her parents with "appendicitis" represents the tricky nature of gynecology. Doctors at times seem reluctant to do pelvic examinations on these girls, yet they can be pregnant or they can have a congenital defect such as absence or atresia of the vagina with a functioning uterus spilling blood through the tubes. The cyclic nature of the pain and a careful pelvic examination should suggest the diagnosis, if other than appendicitis.

On physical examination, the signs of appendicitis are fairly typical though the degree of pain varies with the individual. Tenderness over McBurney's point, muscle spasm, and rebound pains are relatively constant; the area of greatest tenderness often is consistent with the patient's localization of the pain. The leukocyte count is not as important as it was considered to be in the past, but leukocytosis of 15,000 to 20,000 per cubic millimeter of blood would make one suspicious of a gangrenous appendix as would a marked or increasing degree of spasm or rebound tenderness. A rise in temperature and an elevation of the leukocyte count only indicate the existence of an inflammatory lesion, not its location. The sedimentation rate is a somewhat better index. It is not elevated in acute appendicitis in the early stages but is uniformly elevated in pelvic inflammatory disease.

When a pregnant woman has all the characteristic symptoms and signs of appendicitis, she generally has acute appendicitis. In the first trimester there is little confusion unless the appendix lies well over the brim of the pelvis and the tenderness is noticed only on rectal examination. By the end of

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Doctor Pratt holds memberships in the American College of Surgeons, the American College of Obstetrics and Gynecology, the Western Surgical Society, the Society of Pelvic Surgeons and the Central Association of Obstetrics and Gynecology.

the first trimester, however, a syndrome is sometimes encountered that may be confusing. If a round ligament is unduly thickened and taut, it may cause considerable pain but the history is not that of appendicitis; it reveals a more prolonged and gradual onset, and frequently the round ligament itself can be outlined by palpation and the diagnosis established. After the third or fourth month, the enlarging uterus lifts the cecum and appendix from their normal position. Consequently, localizing signs are more bizarre. Point tenderness remains the most important sign. In the third trimester, persistent, increasing tenderness over the entire abdominal wall may be the only sign of even a ruptured appendix that cannot be explained by other diagnoses.

Following delivery, if the patient complains of pain on one side, has localizing signs, and manifests a little fever, leukocytosis, and mild gastrointestinal symptoms, the general surgeon may be called in under the impression that the patient has acute appendicitis; for, postpartum, appendicitis again has a fairly typical onset and course with characteristic localizing signs and symptoms. One condition not generally considered is thrombosis of a broad ligament varix which causes pain, localized tenderness, and a mass. If right-sided, it can simulate acute appendicitis requiring exploration.

ECTOPIC PREGNANCY

One of the most common of the acute abdominal gynecologic emergencies is the ruptured ectopic pregnancy. It will account for more than half of the acute gynecologic problems. One in six patients with a ruptured ectopic pregnancy will be in acute shock when admitted to the hospital. The others will evidence more subacute symptoms and signs. Any degree of shock may be present. On palpation, the abdomen may be very tender and doughy with marked rebound tenderness. Spasm is not a feature if palpation is done gently without sudden movements. Any motion of the cervix or uterus on pelvic examination elicits extreme pain. The cul-de-sac may be boggy and bulging. An adnexal mass may be palpable in 25 to 70 per cent of patients according to various reports. Although a mass should be sought, its absence is not of diagnostic significance.

If the patient is in shock, her temperature may be subnormal, her pulse weak and rapid, and her blood pressure low. Blood counts are not too helpful in estimating the loss of blood, unless made repeatedly for several days. Air hunger and restlessness indicate severe loss of blood.

Typically, following acute rupture, patients can tell precisely when and where the pain began. Collapse or fainting may occur, sometimes allowing blood to reach the diaphragm. The latter causes *referred shoulder pain,* a most helpful diagnostic symptom. The possibility of pregnancy is sometimes hard to elicit from a single woman or a young girl, but patients with a ruptured ectopic pregnancy usually realize they are in a serious predicament and are willing to give truthful, direct answers. Amenorrhea is not characteristic; instead the history indicates other menstrual disturbances, such as a short period or scanty flow, followed by intermittent or daily spotting. In general, ectopic pregnancies occur so early that other signs of pregnancy, such as swelling of the breasts, may be lacking. Pregnancy tests are of little value for a patient in shock.

Pelvic appendicitis must be excluded, but the acute onset with the associated signs of hemorrhage and shock, the failure of the pain to shift, and the absence of localized tenderness all suggest ectopic pregnancy.

Torsion of a cyst with infarction can come on as suddenly and give persistent pain; but the cervix and uterus are generally not tender, a discrete mass is usually palpable, and there is no evidence of loss of blood.

If the patient is not in shock, but other evidence suggests ectopic pregnancy with slow bleeding, posterior colpotomy is an excellent diagnostic aid, provided indications for laparotomy are not overwhelming. This can be done with the colposcope, with a needle, or with a knife. The colpotomy should be done in the operating room when any incision is to be made. In the latter instance, the surgeon is concerned not only with the diagnosis but also with definitive surgical treatment either through the posterior vagina or by laparotomy. Of course, working through a colpotomy incision is troublesome, particularly in turning the uterus to get the tubes and ovaries down

where they can be inspected; but, if the bleeding is not excessive, the procedure is worth while because of the minimal morbidity and quick convalescence achieved when the lesion is controlled through the small incision.

Any patient admitted in shock with a history and physical findings suggestive of a ruptured ectopic pregnancy should be taken to the operating floor. Treatment of shock can be given while the operating room is being prepared. Sometimes we must proceed at once with the operation without waiting for the patient to come out of shock. The abdomen should be opened through a midline incision. After bleeding is controlled, blood and blood clots can be removed, and the blood volume restored; the patient's pelvis may then be explored at a more leisurely pace. Good exposure is essential, therefore all free blood should be sponged out of the pelvis. After the pelvis is clean, the decision to salvage or not to salvage the tube can be made. Until recent years the tube was always removed, often with the ovary. Now we physicians know this is not always necessary. Sometimes the products of conception can be squeezed out the end of the tube and the tube observed for persistent bleeding. Alternatively the mid-portion of the tube can be split longitudinally and the gestational products shelled out with the blunt end of a scalpel. Bleeding points may be ligated, but the tube should be left open. Of course, if a second tube is present and appears normal, one need not hesitate to remove the involved tube. It is axiomatic that the second tube should be thoroughly inspected if for no other reason than to exclude a second simultaneous ectopic pregnancy. When shock has been minimal and blood loss slight, the appendix can be removed; but if much blood has been lost, even if replaced volume for volume, the appendix should probably be left alone.

HEMORRHAGIC CORPUS LUTEUM

A bleeding corpus luteum cyst is the second commonest acute gynecologic lesion. Patients afflicted are generally young, unmarried women, and the bleeding consists usually of only a few cubic centimeters. The syndrome produced is called "Mittelschmerz," because attacks usually occur in the third week of the menstrual cycle. The onset is acute and the pain, maximal in the beginning, is generally in one lower quadrant or the other. Often the history indicates that similar pains have occurred on alternate sides monthly. The menstrual history is otherwise normal. The bleeding is rarely severe enough to cause shock and the history does not suggest ectopic pregnancy, but it is helpful to exclude the possibility of pregnancy. The abdomen may be tender, but the localizing signs characteristic of appendicitis are lacking. There is no pelvic mass to suggest a twisted cyst. If the diagnosis can be presumed, treatment is expectant and watchful waiting, for the pains should decrease and the patient should be better in a few hours. If appendicitis cannot be reasonably excluded or if signs of hemorrhage persist, exploration is indicated. The bleeding corpus luteum or follicular cyst can be readily identified at laparotomy. Since these lesions occur in young women and since in another month the pain may recur on the opposite side, the preservation of ovarian tissue is indicated. Although the lining of the cyst may have to be shelled out to allow the cyst to collapse before the bleeding can be controlled, the ovary almost invariably can be salvaged. The appendix should be removed, if present, to avoid recurrence of this diagnostic problem.

OTHER CAUSES OF INTRA-ABDOMINAL HEMORRHAGE

Ruptured Endometrioma.—One must try to exclude other causes of intra-abdominal hemorrhage and sudden pain, such as bleeding fibroids, ruptured endometriomas, or even ruptured uteri or malignant ovarian cysts. Ruptured endometriomas in particular are not uncommon; in Rochester we see at least one per year as an emergency. As endometriomas are thin-walled and adherent, torsion does not occur, but leakage or frank spillage can and does occur with the associated signs and symptoms characteristic of peritoneal insults. There is no shift in location of the pain, which is maximal at the onset. The pain may occur during a

menstrual period, shortly before or after the period, or in association with some sudden increase in intra-abdominal tension. These patients are in sufficient distress to be brought to a hospital within 24 hours, yet clinically lack the severe pain and shock characteristic of a ruptured ectopic pregnancy. Increasing dysmenorrhea and infertility are often revealed by the history. Abdominal palpation elicits some tenderness, little spasm, and possibly some thickening on one side. Rectovaginal examination may reveal such signs of endometriosis as a retrodisplaced, fixed uterus and small nodules in the cul-de-sac. These patients often require exploration.

The need for salvage of ovarian tissue depends on the age of the woman. Spillage of the mucoid, chocolate material of the cyst is no deterrent to preservation of pelvic viscera.

Leaking Fibroid.—A leaking fibroid is another cause of intra-abdominal hemorrhage. A ruptured coronary vein on a fibroid tumor is the source of bleeding. Patients may be any age, but are usually more than 35 years old. They generally know they have fibroids or a pelvic tumor. The rupture occurs on the posterior wall in fibroids large enough to have developed good sized veins. The onset is typically sudden, but the bleeding is venous and not so catastrophic as that of an ectopic pregnancy. Treatment consists of laparotomy and, usually, total abdominal hysterectomy.

Ruptured Malignant Ovarian Cyst.—Malignant cysts may rupture with consequent spillage of malignant contents, which makes the prognosis poor regardless of what is done. The immediate treatment, however, must be emergency laparotomy with hysterectomy, oophorectomy, and removal of all accessible debris from the abdomen. These patients are good candidates for treatment with radioactive gold (Au_{198}) four or five days after operation.

TORSION OF A CYST

Spontaneous torsion of a cyst may occur. In more than 50 per cent of the cases, the onset of symptoms is sudden. Although some of the women know they have a cyst, most of them come in because of pain. The pain is low, unilateral, and sometimes referred to the hip or the leg. Nausea and vomiting occur later, but there is no shift of pain to suggest appendicitis. Since cysts occur in persons of all ages, the age of the patient is of no diagnostic help. Pelvic examination reveals an exquisitely tender, unilateral mass in more than 85 per cent of the patients. Considerable spasm may be present, if necrosis occurs, but there is no evidence of blood loss to suggest ectopic pregnancy. Also, the uterus is not especially tender on motion, and usually, there is no history to suggest a complication of pregnancy. The treatment is exploration and extirpation of the ovary and tube of the affected side.

Torsion of a tube or cyst of Morgagni is a rare cause of unilateral, low abdominal pain. The tubes are often adherent at the fimbria and twisted on their longitudinal axes. Generally they are not salvageable. The little cysts of Morgagni on long pedicles probably twist often, but only rarely cause enough symptoms to warrant exploration. The same is true of epiploic tags. All of us have seen twisted fat tabs or have removed the smooth, firm, free, almost calcified "pebbles" from the cul-de-sac, yet the patients have no history suggesting an acute episode.

UTERINE FIBROIDS

Occasionally fibroids cause sufficient acute trouble to warrant classification as an emergency. At least they must be considered in the differential diagnosis of the more subacute, slowly progressing abdominal pain. Both torsion and infarction can occur. The former generally has a more acute onset with severity and progression of symptoms depending on the amount of necrosis. The diagnosis is suggested by the absence of signs of hemorrhage and the presence of a unilateral, firm, tender mass. These tumors can be large and require exploration even if the woman is pregnant. Total abdominal hysterectomy is indicated if pregnancy is not a factor; otherwise operation should be limited to salvage the pregnancy.

Infarction or hemorrhagic infarcts also cause pain of sufficient severity to require immediate treatment. Physical examination reveals an irregular uterus, one corner of which is tender. The diagnosis is suggested

by localized pain overlying an irregular area of the uterus. An interstitial ectopic pregnancy, intra-uterine pregnancy, and adnexal lesions must be considered in the differential diagnosis. Treatment consists of exploration and myomectomy or hysterectomy as indicated.

ACUTE SALPINGITIS

Acute salpingitis is still with us in spite of antibiotics; however, it is no longer the surgical disease it once was. Primarily it requires diagnosis and then medical treatment with antibiotics, rest, heat, diathermy, and procrastination. Occasionally, when the diagnosis of appendicitis cannot be excluded, a patient must have an exploratory operation. Even if pus is seen in the tubes at operation, salpingectomy is unnecessary. Leave the pelvis alone, take some cultures, and irrigate with an antibiotic solution. There is a reasonable chance that the patient will get well quickly and will have open, functioning oviducts. If one finds an old pyosalpinx that has flared up again, salpingectomy is the procedure of choice. Most pelvic inflammatory diseases occur after some stress, such as menses, childbirth, abortion, and alcoholic or sexual excess. It starts slowly with discomfort in the lower part of the abdomen. Patients affected can become seriously ill, with a high temperature, a high leukocyte count, and an elevated sedimentation rate. On physical examination, the pelvic organs are extremely tender and bilateral masses may be palpable. Often, also, signs of acute vaginal infection including a purulent discharge may be found. Localized, abdominal tenderness found in appendicitis and signs of hemorrhage found in ruptured ectopic pregnancy are not present.

If a patient does not respond to medical treatment and a mass, which fails to regress after diathermy treatment, develops in the cul-de-sac, a posterior colpotomy should be made to drain the abscess. Subsequently, when symptoms and signs have subsided, a definitive operation can be performed; but such a procedure should be postponed as long as possible to allow the tissues more opportunity to soften and the inflammatory reaction time to subside. This permits the surgeon a more conservative approach.

SUMMARY

Emergency gynecologic lesions, which general surgeons may expect to encounter, include hemorrhagic corpora lutea, ruptured endometriomas, leaking fibroids, twisted cysts, torsion or infarction of uterine fibroids, acute salpingitis, and ruptured ectopic pregnancies.

Proper management depends on accurate diagnosis, since some lesions (ruptured ectopic pregnancies and leaking fibroids) require immediate operation, and others (hemorrhagic corpora lutea and acute salpingitis) ordinarily do not require operation. Diagnostic errors often result from failure to elicit some detail in the history or failure to include part of the physical examination. Rectal and vaginal examinations, especially important in emergency illness associated with abdominal pain, are too frequently omitted.

In differential diagnosis the following deserve emphasis: the shift and localization of pain in appendicitis, the gradual regression of pain in hemorrhagic corpora lutea, and the catastrophic onset, signs of blood loss, and the exquisite tenderness associated with motion of the cervix or uterus in ruptured ectopic pregnancy.

Operative procedures should be designed to correct abnormalities without needless sacrifice of important structures. Ovaries can be salvaged in operations needed to control bleeding from ruptured corpora lutea or endometriomas. In ruptured ectopic pregnancy, the salpinx may be salvaged, after simply removing the products of conception. □

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Research in the Service of Medicine

Closed Chest Cardiac Massage

ALLEN E. GREER, M.D.*

CLOSED CHEST cardiac massage is the most effective method of maintaining circulation whether cardiac arrest or ventricular fibrillation has occurred. The superiority of the closed technique over manual massage is clearly demonstrated in laboratory animals and by enlarging clinical experience. It is pertinent that little delay occurs between the onset of circulatory failure and the institution of therapy, as there is no hesitancy to initiate closed resuscitation. Despite repeated admonitions, manual massage of the heart was often delayed owing to a lack of fortitude in opening the chest. Closed chest cardiac massage is instituted immediately while examinations are being made to determine if circulatory failure is present and whether caused by cardiac asystole or ventricular fibrillation.

Closed chest cardiac resuscitation is performed with the patient in the supine position on a rigid support (not a bed). The heel of one hand with the other on top is placed over the lower sternum, cephalad to the xiphoid. Firm pressure directed downward should depress the sternum toward the vertebral column about 1½ to two inches. Moderate pressure with one hand in children and the finger tips in infants will suffice. The heart is compressed as a result of being relatively fixed in position by the pericardium and blood is thus propulsed from the heart. Release of the hands from the chest allows full expansion of the chest wall, at which time the heart fills. Backward flow is prevented by the heart valves. The rate of compression should be 60-80 per minute.

Adequate closed chest cardiac massage is indicated by a palpable brachial, carotid, or femoral pulse, constriction of pupils, and at times, respiratory efforts.

Simultaneously with restoration of circulation, the airway should be cleared and mouth-to-mouth, mouth-to-nose, or mouth-to-S-tube respiration performed. If only one person is present, thirty seconds of massage should be alternated with three-four ventilations of the lungs.

These measures having been instituted, an electrocardiogram will reveal whether cardiac asystole or ventricular fibrillation is present. The latter may be the cause of circulatory failure or follow cardiac standstill. Defibrillation is then performed, preferably by the external method.

Supplemental treatment of the underlying pathology, special drugs, and meticulous post-resuscitative care are essential.

Although closed chest cardiac massage will save the lives of many patients with cardiac arrest occurring during surgery, prevention of this catastrophe should be stressed. Closed chest cardiac massage has also proven efficacious in the resuscitation of patients with ventricular fibrillation in "hearts too good to die." The cause of ventricular fibrillation in normal hearts or those with infarcts, has been the cause of much speculation, and it may be that an electrical disturbance occurs which triggers off the bout of fatal ventricular fibrillation. Closed chest cardiac massage has resuscitated such hearts. It should also be lifesaving in some instances of trauma, electrocution, and drownings.

Physicians are encouraged to become informed about this new technique. A booklet, "Closed Chest Cardiac Resuscitation," and a demonstration film are available at no cost through the Oklahoma State Heart Association, 825 N.E. 13th, Oklahoma City 4, Oklahoma. □

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OSMA JOURNAL/medical center

Dean's Message

This year the Association of American Medical Colleges is devoting its annual institute to a study of the effects of research funds on medical education. This is a timely subject, and one which even those engaged in medical research have not analyzed carefully. In recent years, unprecedented sums have been made available for medical research of faculty members and accredited scientists and clinical investigators. This is true also regarding medical training grants for a great variety of special teaching programs, the chief purpose of which is to develop competently trained personnel to conduct future clinical and scientific investigation. These grants come from national foundations and fund-raising societies, and from a number of federal government agencies.

We have been asked to comment on the role of federal funds in medical schools. Now to discuss briefly the immediate effects of the research and training funds on our educational program.

The two largest sources of assistance to our medical school are the National Institutes of Health and the Veterans Administration, the former providing funds primarily and the latter, teaching services. NIH grants have been of major assistance in supporting and developing research in all departments of the School of Medicine, in the construction of medical research laboratories, in the support of research personnel, and in financing a considerable part of the present training program for residents, fellows and graduate students.

It is only in a few indirect ways that the NIH has assisted medical schools in their serious and unsolved fundamental problem of securing support for the basic and primary task of educating medical students to be physicians. Some NIH grants are available for stipends to medical students working on research grant projects during vacation and spare time. Also, the school receives some "overhead" on most grants in order to partially offset the additional general cost which research and training programs place on our medical center. The only actual contributions to the basic operating cost of the medical school are those teaching services which are given by grant-salaried faculty members, and the transfer of expensive research equipment which remains with the school at the termination of a project.

In contrast, the chief assistance rendered by our affiliated Veterans Administration Hospital is to the basic educational program for medical students. It shares in this way the objectives of a very few private foundations, namely, the National Fund for Medical Education and the American Medical Education Fund for the American Medical Association. A "Dean's Committee" Veterans Administration Hospital accomplishes this by authorizing a committee from the medical school faculty to recruit and select members for the affiliated hospital staff and

these members, in turn, become a part of the school's faculty with assigned regular teaching duties under control of various medical school departments. The affiliated hospital supports the medical school teaching program and conducts department-supervised clinical teaching through its hospital facilities. In our case, the VA Hospital constitutes a third university teaching hospital, and performs instructional services that would otherwise cost the University an additional $500,000 annually, even if the University owned the physical plant and some other agency or private source fully financed its patient care.

This discussion has been limited to federal sources of assistance according to the request, but no one should underrate the importance of developing all the possible sources of private and non-federal support to our school and medical center. While to date the federal government has no more interfered with the implementations of its assistance or with the proper conduct of the School of Medicine than has our own state government, all governmental activities are necessarily circumscribed by certain laws, by legislatures, or by Congress.

The state of Oklahoma, whose citizens are the chief beneficiaries of our school and medical center, and of its teaching hospitals, has yet to come forward with sufficient basic financial support to maintain the center. In the School of Medicine alone, a situation has developed whereby our faculty members have to raise about 80 per cent of each year's operating funds. Private and federal sources have stepped in to make funds available to medical faculties for a variety of research and medical training projects, but unfortunately someone has to pay the telephone bill. Where can our medical school secure supplementary financial aid? The only really unrestricted gifts at present are those from the National Fund for Medical Education (contributed by industry) and from the American Medical Education Fund (contributed by physicians and medical auxiliaries). It cannot be emphasized too strongly that these two unrestricted gifts are of great value in a medical school's struggle to meet its basic costs. The same would apply to any private gifts, but Oklahoma's citizens have not been thinking of their medical school as an object for private benefaction.

I wish in all sincerity to reassure friends and physicians that the University of Oklahoma School of Medicine continues to control its academic affairs through its faculty alone, and that it is influenced in no way except by suggestions of alumni, faculty members, and physicians and by the recommendations of the AMA Council on Medical Education and the recommendations of the Association of American Medical Colleges. The funding assistance obtained in our teaching program, from private and federal sources, and from the affiliation of the Oklahoma City Veterans Administration Hospital, neither changes nor interferes with the type of our medical teaching program. Furthermore, our faculty would not look kindly on any outside interference in medical education, though it will continue to give careful consideration to suggestions of merit. □

Mongolism

RICHARD E. MANSFIELD, M.D.

A review of the history, diagnostic characteristics and recent advances in the basic etiology of mongolism.

HISTORY

IN 1866, J. Langdon Down from the Earlswood Asylum in England first described the entity now generally known as Mongolism in his classic paper on the "Observations on Ethnic Classification of Idiots." This first description is classical and the condition is termed Down's Disease in some countries. Although the original paper is not available for our study, numerous quotations from it are available in the later literature. Down was influenced by the dogma that such pathologic entities were often retrogressions into earlier types in the history of man.

" 'I have been able to find among the large number of idiots and imbeciles which come under my observation . . . that a considerable portion can be fairly referred to one of the great divisions of the human family other than the class from which they have sprung. . . . The great Mongolian family have numerous representatives . . . a very large number of congenital idiots are typical Mongols. So marked is this, that when placed side by side, it is difficult to believe that the specimens compared are not children of the same parents'."[11]

Oster quotes Down as to the symptomatology and psyche.

" 'The hair is not black as in the real Mongol, but of a brownish colour, straight and scanty. The face is flat and broad, and destitute of prominence. The cheeks are roundish and extended laterally. The eyes are obliquely placed, and the internal canthi are more than normally distant from one another. The palpebral fissure is very narrow. The forehead is wrinkled transversally from the constant assistance which the levatores palpebrarum derive from the occipitofrontalis muscle in the opening of the eyes. The lips are large and thick with transverse fissures. The tongue is long, thick and is much roughened. The nose is small. The skin has a slight dirty, yellowish tinge, and is deficient in elasticity, giving the appearance of being too large for the body.' Of their psyche he wrote as follows: 'They have considerable power of imitation even bordering on being mimics. They are humorous, and a lively sense of the ridiculous often colours their mimicry. This faculty of imitation may be cultivated to a very great extent, and a practical direction given to the results obtained. They are usually able to speak; the speech is thick and indistinct, but may be improved very greatly by a well-directed scheme of tongue gymnastics. The co-ordinating faculty is abnormal, but not so defective that it cannot be greatly strengthened. By systematic training considerable manipulative power may be obtained'."[19]

The next scientific report on this entity

was presented by Fraser and Mitchell at a meeting of the Medico-Psychological Association held in the Royal College of Physicians, in Edinburgh on December 14, 1875. Their report was later published in the *Journal of Mental Science.* A Doctor Ireland, who was chairman of the meeting, rejected their term of "Kalmuc idiocy," but included the entity as a special type of mental deficiency in his book, *Idiocy and Imbecility,* published in 1877.

Since that time, much of the interest in the subject has been concerned with the etiology. The theories concerning the etiology may be categorized into four main types. First, there was the theory of reversion to a primitive ancestral type such as expounded by Down. Second, others believed the condition to be due to disturbances in the uterine environment such as disease states, gestational accidents or aging of the ovum. Third, is the theory of changes within the child, especially endocrine deficiencies. Finally, there were the genetic theories involving mutations, injury to germ cells or interaction between genetic constitution and the uterine environment. Important as far as endocrine and genetic theories is the work of Shuttleworth in 1886, who termed these "unfinished children," believing that their peculiar and distinctive appearance was really a phase of fetal life. Penrose, in 1949, was undoubtedly thinking along similar lines when he proposed the term "generalized foetal dysplasia" or "foetalism."

In 1932, Waardenburg suggested that Mongolism is associated with a chromosomal aberration and specifically mentioned nondisjunction. Penrose, in 1949, suggested an unbalanced chromosomal complement might account for Mongolism. The concepts concerning the etiology of Mongolism began to change radically in 1956. At that time, Tjio and Levan with their cell culture technique, reported that the normal chromosomal number was 46 rather than 48.[1, 31] In 1959, the discovery of 47 chromosomes in Mongolism was reported almost simultaneously in France by Lejeune, in England by Ford, in Sweden by Böök and Fraccaro and in the U.S.A. by Puck. Priority of publication goes to Lejeune[12, 13] who also believed that this aberration was due to non-disjunction, although he realized that other phenomenon may be causative factors. While all appeared settled for about a year, the atmosphere was again shattered in 1960. Polani[21] and Fraccaro,[8] reporting independently in the same issue of *The Lancet,* found Mongols with a normal number of 46 chromosomes, but with definite chromosomal abnormalities which were attributed to translocation. Thus, the picture stands at the moment.

FREQUENCY AND CLINICAL MANIFESTATIONS

The frequency of Mongolism, as reported, is variable from article to article. It is really difficult to arrive at a definite figure as the diagnosis is often not made at birth. However, it is generally agreed that the entity occurs in all races and all countries. Generally, the frequency is reported to vary from one in 1,000 to one in 10,000 live births. The frequency among mental defectives in institutions varies from 2.5 per cent to as high as 13 per cent.

Numerous signs and symptoms are present in Mongols but may vary in each individual patient. The general physical appearance together with the mental retardation are characteristic for that entity only. However, there are less typical findings which are much more frequent in Mongols and their relatives than in normal persons but are not in themselves diagnostic. Such findings are referred to by some authors as microsymptoms.

Besides the characteristics mentioned in the classic description of Down, other typical findings include a small, usually brachycephalic head, unusual epicanthic folds[19] and a speckled iris. Other less characteristic and less frequent findings include many different defects of the pinna of the ear, these

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tending to be small and simplified. Flatness of the bridge of the nose is one manifestation of the cranial synostosis. Frequently, a constant nasal discharge will be observed as Mongols appear to have an increased susceptibility to upper respiratory infections. An increased tendency has also been reported in Mongols to leukemia. The teeth are commonly hypoplastic and are late in appearing. Mongol necks are short and broad. In about ten per cent of cases, a congenital heart defect is present, this usually being a septal defect. The abdomen is pear-shaped and distended due to insufficient muscle tone; umbilical hernia is frequent. In general, the extremities are short in comparison to the trunk and there is hyperflexibility of the joints and hypotonic muscles. The fifth finger tends to be short and curved. Both fingers and palms are short and relatively broad, presenting an unusual appearance. In some, the normal two main transverse palmar creases are replaced by a single four-finger-line.[19] Many authors make a tentative diagnosis by the dermal configurations.[25] There is often a large space between the first and second toe, and a deep line may extend from this space into the sole of the foot. Frequently, the third toe is longer than the second. The genitalia of female and male Mongols are usually hypoplastic. The male has hypoplasia of both testes and penis and the testes may be undescended. The female has enlarged labia and clitoris and small breasts. Mongols usually have decreased sexual drive and activity than that of the normal, and reproduction is extremely rare. The mental retardation of Mongols is very interesting. Between 5-25 per cent of Mongols are idiots (IQ 0-24), some 70 per cent are imbeciles (IQ 25-49), 4-22 per cent morons (IQ 50-69) and a few have borderline IQ's of 70-79. It has been reported that Mongols reared at home have higher Intelligence Quotients and Social Quotients.[7, 22]

Important findings are also noted on x-ray films. Although not as marked as in cretinism, there is delayed maturation of the entire skeleton. The second phalanx of the fifth finger is often hypoplastic. Usually the most characteristic finding, especially during early life, is decrease or smallness of the acetabular angles with deepening of the acetabular cups. Also, ilial wings may be large and flare laterally.

In addition to mental retardation, various central nervous system anomalies have been noted. These include reduced weight of the brain, incomplete development of the third frontal and superior temporal gyri, poorly marked secondary sulci and reduced volume of the cerebellum and brain stem. There may be reduction in number of cerebral cortical nerve cells as well as focal or diffuse diminution in myelin in cerebral white matter sometimes accompanied by a gliosis.[26]

Endocrine findings have included reduced amounts of colloid in thyroid follicles, reduced size and number of islets of Langerhans, and greater variation than normal in the size of the anterior pituitary's acidophile cells.[26] Reduced thickness of the glomerular zone of the adrenal cortex has been reported even though the adrenocortical function in the resting Mongol has been found to be normal.[18] There have been no consistent gonadal findings.

ETIOLOGY

In contrast to the confusion in the past, the basic etiology of Mongolism is now known to be definitely due to a chromosomal aberration. Hence, the definitive laboratory diagnosis may now be based on examination of cell cultures of individual suspects. There is currently a controversy on the real genetic basis of the chromosomal aberration. The main two theories at the present time are those of either non-disjunction or translocation. No doubt, other theories will be presented in the future.

Now, let us consider facts that have been known for many years and that are consistent with this genetic etiology. The maternal age appears to be a factor, as the average age of mothers bearing Mongols is 37 years compared to 29 years of age for mothers bearing normal children. There is a three per cent chance of Mongolism in pregnancies over the age of 45 compared with a 0.001 per cent under the age of 30 years. An increased familial incidence is suggested where several Mongol children are born to a mother whose maternal age is significantly lower than the average of 37 years. Decreased maternal age in relation to Mongol births is also seen where there is

an affected maternal relative. As was previously mentioned, microsymptoms are more frequent in relatives of Mongols than in relatives of normal children. Increased consanguinous marriages of maternal grandparents have been suggested as a possible cause of increased rate of Mongolism in their offspring. In monozygotic twins with Mongolism, both twins are always affected. In dizygotic twins, one individual may be normal and the other a Mongol. This strongly suggests that the entity is established before the earliest embryologic age at which a zygote may begin dividing into two embryos.

Proven facts regarding chromosomal aberration will now be considered. At the present time there is not complete agreement regarding the numbers given to the chromosomes. However, most authorities use the Denver classification, and this classification will be adopted in this presentation. In the original work on Mongolism observers reported an extra chromosome in addition to the normal number of 46. This extra chromosome corresponded in appearance to chromosome #21 of the normal individuals. Thus, there was present in the Mongol individuals of the original report a triple allele system. That is, there were three #21 chromosomes, referred to as trisomy. Most authorities believe that this trisomy can be readily explained by the process of non-disjunction.[1] In the process of non-disjunction there is nonseparation of one or more chromosomes in the reduction phase of miosis and both identical chromosomes pass to one daughter cell. The other daughter cell then has an absence of that particular chromosome. (As a correlation of this and advancing maternal age are findings in Drosphilia fly experiments. Non-disjunction was noted to occur more frequently in elderly virgin flies, and when these were bred, there was an increased incidence of exceptional males and gynadomorphs). With the finding of the extra #21 chromosome, it appears reasonable that non-disjunction may well account for this finding. However, the picture does not end here.

Recently it has been reported that there are Mongols who have the normal number of 46 chromosomes, but these individuals have an abnormal chromosomal component. Namely, one of the normal chromosomes that should be present was absent and in its place was an abnormal chromosome which in every case appeared to be the result of fusion of two chromosomes, one of these always being chromosome #21. Even in these cases, a partial trisomy of #21 was thus present. However, the process of non-disjunction hardly seems applicable here. Rather, the process of translocation seems more plausible. This process of translocation is simply the joining of one part of a broken chromosome with a part of another to form a new and complete chromosome. It does not seem unreasonable that both processes may cause this abnormal chromosomal entity in different individuals, and that other processes may be implicated in some individuals in the future. (See figures 1 and 2.)

Doctor Alexander G. Bearn in a discussion on chromosome aberrations at the Symposium on Congenital Malformations at the University of Oklahoma School of Medicine on January 25-26, 1961, stated that there were really two different types of Mongolism according to genesis.[2] The cases produced by non-disjunction tended to be random in distribution and occurred in pregnancies in advanced maternal age, while those caused by translocation tended to be associated with an increased familial incidence and in mothers of earlier ages. Parents and some realtives of Mongols of the translocation group were phenotypically

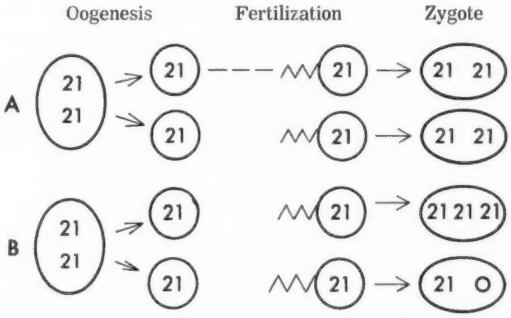

Illustration of Non-disjunction (Modified from Bearn[1]).
A—Normal
B—Non-disjunction with trisomy of chromosome #21

Figure 1

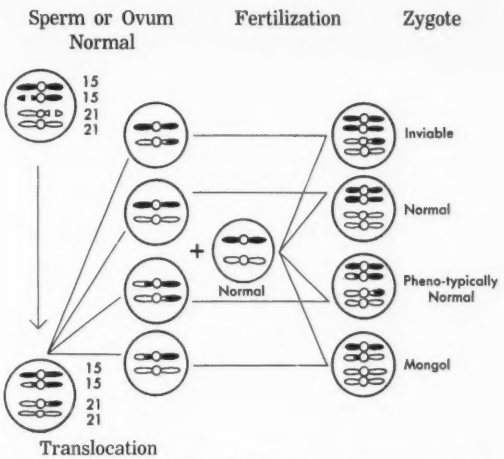

Illustration of Translocation as a cause of Mongolism. (Modified from Polani[21].)

Figure 2

normal but chromosomally distinct, some cases being reported with 45 or 47 chromosomes.

The entity of Mongolism now appears to be due to the presence of trisomy or at least partial trisomy of chromosome #21. Several interesting speculations by which the trisomy may produce Mongolism will be considered. First, there is the possibility that trisomy *per se* in an unknown way produces Mongolism. In this respect Warkany[26] states that there is the theory that Mongolism may be a dosage effect resulting from excess production of a substance or substances ordinarily formed or influenced by genes of chromosome #21. Another theory that has been proposed is that only some #21 chromosomes carry genes that when present in sufficient numbers cause Mongolism. The theory of dosage effect seems more plausible since it is presently believed that much of the control of metabolism arises from genetic information carried in chromosomes. Thus, it would not be unusual if some abnormal metabolic changes were present in this condition characterized by the chromosomal abnormality of trisomy of #21.

Indeed, abnormal metabolic changes have been found to occur and undoubtedly many more of such changes will be noted in the future. One of the abnormal metabolic changes reported in Mongolism is an elevated serum gamma globulin of statistical significance, and this gamma globulin has been found to increase as the Mongols grow older. (Although this may be a true metabolic change, one must take into account the increased number of respiratory infections which Mongols have and hence possible increased antibody formation.) Elevated serum lipid and lipoproteins are reported by some authors.[4, 23] Abnormalities in tryptophan metabolism have recently been reported.[17] Carver et al. reported impaired vitamin-A-in-oil absorption and elevated urinary excretion of B-aminoisobutyric acid found by other workers.[6] Also, significantly lower serum calcium and higher serum organic phosphate have been reported[34] as have changes in the differential leucocyte count.[15] Other changes such as cranial anomalies and endocrine changes have been discussed previously.

TREATMENT

The treatment for Mongolism is non-specific. Schuller, in 1907, coined the term "acromicria" and pointed out that the physical defects were just the opposite of acromegaly. In the past, persons adhering to Schuller's belief, treated Mongolism with pituitary extracts with varying results, but at no time was the condition definitely changed. Perhaps, with future research prevention and therapy will become more satisfactory.

At the present time, one of the most encouraging and important problems is the care of the Mongol. All authorities do not agree on the long term care of Mongols. A definitive diagnosis is usually not made in the newborn nursery. If Mongolism is suspected, most authorities agree that the parents should be warned that the child may be slow in developing. Gradually the parents realize that they have an "exceptional child" and will adjust accordingly. They must be given time to contemplate and should receive a thorough explanation regarding the condition from their physician as the child grows. Finally, suggestions for the need for institutional care should be given as the need arises. As has been pointed out before, Mongols have a pleasing temperament and require a protected environment, which can readily be found in most homes. As first demonstrated by Quaytman[22] and later by

the Centerwall & Centerwall,[7] mongols reared in the home until at least two and one-half years of age showed significantly higher Intelligence and Social Quotients than Mongols of similar ages who were institutionalized earlier. These authors state that home-reared Mongols were much more trainable than those placed in institutions in early life. It would appear that society may be greatly benefited and costs of maintaining such persons in their later years decreased, if no Mongol was taken away from the home until after the age of three years or more. There are several recent articles for parents of Mongols to read.[28, 29, 30]

THE FUTURE IN MONGOLISM

The future appears unlimited in the study of Mongolism, but future endeavors will differ much from past studies. With the discovery of the basic cause, the trisomy of chromosome #21, the field of human genetics opened a new frontier. It is likely that the process under control of the genes of #21 cause, or have a great deal to do with the cause, of Mongolism. Undoubtedly, these genes and their processes may produce definite abnormalities in the processes and pathways under their control in addition to the production of Mongolism. It is possible that investigators will be studying multiple systems and not just single systems. Eventually, much may be learned about both the genes and basic processes concerned with in chromosome #21. After the above discoveries, the area of research has been opened for further investigation of processes controlled by other chromosomes. The horizon has been approached, but the view appears unlimited. □

(I wish to express my appreciation to Doctor Neil Kirkman and Doctor Lucius Waites for their constructive criticism in the preparation of this manuscript.)

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ABSTRACTS

A Peregrinating Problem Patient

Warden M. Rimel* and Chester M. Pierce**

Diseases of the Nervous System, 22: 1-6, March 1961

In answer to the plea by internists for psychiatrists to study Munchausen's syndrome, a case study is presented. The patient is a 39 year old man whose life history was obtained from medical and social agencies, as well as interviews with the patient and his family. This material includes a psychiatric evaluation that the patient had when he was aged nine. Birth injuries and environmental privation may have contributed to the etiology of this case.

The patient's life has been characterized by frequent peregrinations with intervening periods of confinement in prisons and hospitals. Admission to the hospitals is accomplished by fraud. Often there has been a premature discharge as result of the patient's own provocations.

Psychodynamically, this man directed his life toward satisfying an insatiate need for attention, utilizing masochistic swindling for force gratifications from his environment. His behavior was directed also toward a denial of mediocrity. The peregrinations seemed to serve as a means of thwarting suicide.

Management of such patients is compounded by: 1) the difficulties in making a diagnosis, and 2) the inability to procure legal power to confine the patient for long term care. Treatment suggestions include the use of individual, group, and milieu therapy as well as social service and vocational counselling.

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Massive Hemolysis in Extracorporeal Circulation

Howard B. Keith,* Earl Ginn,** G. Rainey Williams*** and Gilbert S. Campbell****

The Journal of Thoracic and Cardiovascular Surgery 41: 404-407, March 1961

1. Massive hemolysis following cardiopulmonary bypass has been encountered in two consecutive patients.
2. Laboratory investigation indicates the presence of an unstable hemolytic agent in a single segment of plastic tubing.
3. This experience suggests the need for routine testing of new segments of plastic tubing.
4. Treatment of these patients with cortisone, sodium lactate, urea, and exchange transfusions has been effective.

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**Clinical Investigator—V.A. Hospital.
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****Professor of Surgery.

Some Preliminary Studies of "Stress" in the Western Diamondback Rattlesnake (Crotalue Atrox)

Russell Allen,* L. G. Gumbreck** and M. R. Shetlar***

Proc. Okla. Acad. Sci. 40: 19-21, 1960

Histological changes and increases in weight were noted in the adrenal glands of all experimental animals. Changes were also noted in the serum electrophoretic patterns of these animals. It is suggested that these changes are due to the stress mechanisms.

The changes observed in the histological structure and weight of the thyroid glands of the experimental animals are interpreted as normal physiological responses of that gland to higher temperatures.

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Response to Cortisone Predibetes Glucose- and Steroid-Glucose Tolerance in Subjects Whose Parents Are Both Diabetic

Kelly M. West*

Diabetes, 9: 379-385, Sept.-Oct., 1960

Subjects whose parents were both diabetic were studied with respect to glucose tolerance and cortisone-glucose tolerance. The status of glucose tolerance was known or tested in forty-six of these individuals whose ages averaged thirty-seven years.

In fourteen (29 per cent) glucose tolerance was impaired. These data were compatible with the notion that the incidence of genetic susceptibility to diabetes in this group approaches 100 per cent.

Cortisone-glucose tolerance tests were performed in twenty-six persons with normal glucose tolerance whose parents were both diabetic. Their responses to cortisone were not significantly different from those of a control group with normal glucose tolerance and no family history of diabetes. Seven other subjects whose parents were both diabetics were not tested after glucose alone, but had steroid-glucose tolerance tests. Four had cortisone-glucose tolerance tests and three had prednisone-glucose tolerance tests. The results of all seven tests were normal.

Cortisone-glucose tolerance tests were performed in twenty-six subjects with slight impairment of glucose tolerance. Their responses to cortisone were normal.

Thees findings sugest that individuals with prediabetes are not unusually responsive to the hyper-glycemic effects of cortisone when it is administered by the technic of Fajans and Conn.

*Asistant Professor of Medicine.

medical center

Effects of Parathyroid Extact on Serum and Kidney I. Effect on Sulfur-35 Incorporation Into Components of Rat Serum and Kidney

Regan H. Bradford,* R. Palmer Howard,** Walter Joel*** and M. R. Shetlar****

Biochemical and Biophysical Research Communications 1: 350-351, Dec. 1959

Rats were given injections of radioactive sulfate in the form of sodium sulfate. Seventy-two hours after the first injection parathyroid extract injections were stated and given in divided doses for three days. Radioactivity was found to be approximately twice as high in the serum of parathyroid treated animals as it was in control animals. Much of the increased was not dialysible. Increased radio activity was also found in the kidney. Most of the radio-activity of serum was found in the albumin and the β-globulin fractions.

These data support the hypothesis that parathyroid extract causes a breakdown of bone matrix or other connective tissue and that this material is found in the kidney lesions occurring after PTE administration.

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****Professor of Biochemistry.

Effects of Parathyroid Extract on Glycoprotein and Mucopolysaccharide Components of Serum and Tissue

M. R. Shetlar,* Reagan H. Bradford,** Walter Joell*** and R. Palmer Howard****

The Parathyroids 144-155, 1961

The possible mechanism of PTE action upon tissue glycoprotein and mucopolysaccharides is particularly nebulous. Chemical observations do not fit well the simple postulation that the extract causes a depolymerization of the bone matrix to more soluble components which pass into the blood stream. A hypothesis at least equally tenable is that PTE causes an increase in cells (or a redifferentiation of cells), which produces acid mucopolysaccharide. During this process glycoproteins rich in bound neutral carbohydrates are released from the bone matrix or their production stimulated. Due to increased production, a limited amount of the acid mucopolysaccharide also enters the blood stream and finds its way to the kidney. Further studies of bone and soft tissue mucopolysaccharides and glycoproteins as affected by parathyroid extract are indicated. Studies of different parathyroid fractions in this relationship are also indicated.

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FACULTY NEWS

Carl Nau, M.D., Will Head Institute of Environmental Health

Carl August Nau, M.D., recently appointed professor of preventive medicine and public health, has arrived at the Medical Center to establish an institute of Environmental Health made possible by the Center's first grants from industry.

NAU

Doctor Nau came here from the University of Texas Medical Branch, Galveston, where he headed the Department of Preventive Medicine and Public Health for 20 years.

A graduate of the University of Chicago School of Medicine, Doctor Nau earlier (1930-36) was on the OU medical faculty, leaving here to join the staff of the Texas State Department of Health. He has been active in the occupational health field 24 years; is an associate editor of *The Archives of Environmental Health* and a member of the Committee on Toxicology of the National Research Council.

The Medical Center received gifts totaling $81,500 to launch the Institute, which will conduct a program of teaching, research and service to industry. Occupational health will be taught medical students, practicing physicians, engineering students and others with an interest in the impact of man's environment on health.

Funds were given by Kerr-McGee Oil Industries, Oklahoma City; Phillips Petroleum Company, Bartlesville; Monsanto Chemical, St. Louis, Missouri; The Cabot Corporation, Boston, Massachusetts; Sid Richardson Carbon, Fort Worth, Texas; United Carbon and Continental Carbon, Houston, Texas; Columbian Carbon, Trenton, New Jersey; J. M. Huber Company, Borger, Texas; and Atlas Powder Company, Wilmington, Delaware.

Moneys, matched by a grant from the National Institutes of Health, will be used to complete and equip the unfinished top floor of the Center's new research building to house the Institute. □

OSMA JOURNAL/special

Taxpayer Opposes Socialized Medicine

STEVE STAHL

In testimony before the House Ways and Means Committee, a leading conservative from Oklahoma City speaks out against H.R. 4222.

My name is Steve Stahl. I reside at 1919 Northwest 33rd Street in Oklahoma City. I am Executive Vice-President of the Oklahoma Public Expenditures Council.

The Council is a privately supported, state-wide, citizen-taxpayer organization composed of members—from virtually every interest and activity in our great state—who are interested in good, effective, efficient and economical government at local, state and national levels.

I appear before you today as a witness opposed to the legislation under consideration which seeks to commit the federal government to a program of providing medical care for *all* persons eligible for Social Security benefits regardless of need.

Certainly, we cannot deny or ignore the necessity of providing good medical care for all American citizens regardless of age or income.

I am old-fashioned enough to believe that this responsibility rests first with the individual; second, with the family unit; third, with voluntary private charity organizations; and, as a last resort, with compulsory public charity.

As an example, I sincerely believe that financially able adult children have a moral obligation to care for their parents. I do not believe this moral responsibility can be met by transferring it to a governmental agency—which is exactly what too many American people are doing or seeking to do today.

In this connection, so far as I know, in all the surveys and studies published by both those who support and those who oppose this legislation, no attempt has been made to determine the ability of adult children to provide medical care for parents who are unable to provide such care for themselves.

I suspect that such a study, plus a return to family responsibility, would quickly reduce this medical care mountain to a molehill.

However, regardless of the size of the problem, we already have a governmental program by which to provide medical care for those who actually need it. I refer to the Kerr-Mills bill, which was carefully drafted by the distinguished Chairman of this Committee and Oklahoma's senior and equally distinguished Senator, Bob Kerr.

Our State Welfare Director, Mr. Lloyd E. Rader, informs me that this program is meeting our needs in Oklahoma in a satis-

House Ways and Means testimony, August 1, 1961.

factory manner. Since it is meeting the problem in Oklahoma, there is no reason why it cannot effectively meet the needs in the other 49 states.

At least this program deserves a reasonable time trial before being replaced by the plan which is being considered here—

—a plan which, by no stretch of the imagination, can or should be labelled as a prepaid medical program.

—a plan which limits coverage to those who are eligible for Social Security benefits regardless of need and makes no provision for those not on Social Security who may be in dire need of assistance.

—a plan which commits the federal government to a program, the cost of which can only be a matter of conjecture but which is certain to exceed original estimates by many billions.

—a plan which will open the door to the same abuses and chiselling which are now prostituting efforts to care for our less fortunate citizens in almost every facet of our present Social Security program.

In case there is any question about these last two items, let's look at the record.

With regard to cost, when the Social Security Law was passed in 1935, it was estimated that benefit payments in 1955 would amount to less than a billion dollars. However, actual payments were over five billion, or nearly six times the original estimate. Again in 1943, Social Security actuaries estimated benefit payments in 1957 would total $1.2 billion but they actually amounted to more than seven billion.

Is there any reason to believe that a medicare program under Social Security would not follow the same pattern?

With regard to abuses, I need only point to the Aid-to-Dependent Children program which can only be classified as a national disgrace.

This program was originally designed to keep families together in homes in which the bread winner was either dead or incapacitated. Today, less than one-third of this billion dollar a year program is spent for this purpose; more than two-thirds is spent to provide for children deserted by their fathers, living in broken homes or born out of wedlock.

The Department of Health, Education and Welfare predicts this situation will worsen in the future and, regrettably, it has successfully resisted efforts by a number of states to curb these abuses.

You may also recall that the Old Age Assistance program was to be operated only long enough for the OASI program to become fully effective. However, in December,

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Steve Stahl is Executive Vice-President of the Oklahoma Public Expenditures Council, a position he has held for the past 14 years. He served as Chairman of the National Taxpayers Conference for 12 years.

Before coming to Oklahoma, he was Executive Director of the Arkansas Public Expenditures Council for four years and previously had served both the Ohio and Missouri state taxpayers associations as Director of Public Relations.

Mr. Stahl is the recipient of a George Washington Honor Medal Award by Freedoms Foundation for his "Voice of the Taxpayer" television series on Economic Education as "an outstanding achievement in helping to bring about a better understanding of the American way of life in 1959."

He has been affiliated with the citizen-taxpayer movement for the past 23 years, and prior to that spent some 18 years in newspaper work, mostly as a special assignment and political writer in Ohio.

Mr. Stahl has served as a member of the Board of Directors of the Citizens Committee for the Hoover Reports and as a member of the Board of Trustees of the Governmental Research Association, a national organization of professional people engaged in the related fields of governmental administration and research.

He is a veteran of World War One and a member of the American Legion. He is now serving as President of the Downtown Kiwanis Club of Oklahoma City where he resides.

1946, there were 2,195,806 persons on OAA as compared to 2,318,128 in March, 1961.

Another major objection to this legislation is that it will increase the burden of federal taxation which is already bleeding the poor as well as soaking the rich. This proposed tax increase would impose an additional hardship on the nation's wage earners who are already paying more in taxes than they are for food, clothing and medical care.

Mr. Chairman, in conclusion, I contend the greatest favor we can extend to the people this legislation seeks to help is to preserve the purchasing power of their dollars. In order to do so we must stop fanning the fires of inflation with federal spending fans.

Perhaps the most compelling question which must be considered by this Committee and the Congress is the total amount of responsibility the federal government can assume in providing for its citizens without impairing its ability to protect our nation and preserve our freedom in this chaotic world.

There will be no security—and very little medical care—for any of us in a bankrupt or vanquished America.

Thank you for permitting me to present these views for your consideration. □

Health Bill Given High Priority

The defeated Anderson-King Bill, a measure to provide hospital, nursing home and limited medical care to the nation's 14 million social security recipients, will be back again next year—and is given a better-than-even chance to pass. Election-minded lawmakers, anxious to please their constituents, are likely to use the medical care program as a means of liberalizing social security, a traditional maneuver during election years.

To make matters worse, President Kennedy recently promised to place the "highest priority" next year on an aged health care program financed through social security. In response to a letter from Senator Pat McNamara (D., Mich.), advocate of socializing health care for the elderly, Kennedy said: "I wholeheartedly agree with your belief in the importance of this legislation to the nation. I assure you that I intend to recommend that this legislation be given the highest priority at the next session of Congress."

Proponents of legislative action along the lines of the King Bill or the old Forand Bill are hard at work to lay early groundwork for eventual approval. For example, Senator Jacob Javits (R., N.Y.) is urging that Republicans and Democrats use the present congressional recess to meet and work out compromise legislation which would gain endorsement from both parties. He feels that coverage of all aged persons, not merely those on social security, might be the answer. Also, he suggests that preventive care, including physicians' services, could well be added to the benefits of the legislation.

Former Democratic Congressman Aime Forand of Rhode Island, original author of this type proposal, is now pushing for legislation from a different post. He has just announced the formation of a National Council of Senior Citizens for Health Care Through Social Security. Object: To lobby for the goal its name specifies.

AMA officials, while admitting that there will certainly be increasing pressures from the Administration and liberal lawmakers, are not ready to throw in the towel. They are reminding physicians and their many allies that big legislative battles have been fought and won before. However, they are predicting that only an all-out effort, necessarily rising from the grass roots level, will dissuade Congress from socializing health care for the aged segment of the population.

Counterfeit Doctors: A National Problem

Following an examination and treatment for prostatitis, the southern Oklahoma rancher asked the clinic's bookkeeper if he could see the physician again for a minute. "Doc," he said, "I just wanted to thank you for the discount—six dollars is plenty cheap."

"But you received no special favor," the physician replied, "that's my regular fee for this service."

The rancher expressed surprise, then explained that he had been going to an Oklahoma City chiropractor for his "cancer" treatments—at $100 a visit. Incensed by the fraud, the doctor did some checking and found that the chiropractor was administering a quack cancer cure called the Koch Shot. He made an effort to have the rancher file charges, but was unable to overcome the man's reluctance to make public the fact that he had been duped.

Similar anecdotes are occurring thousands of times daily across the United States, as medical quackery flourishes into a billion dollar business.

AMA Campaign

The American Medical Association's Department of Investigation, founded 55 years ago, has earned a reputation as the "medical watchdog" of the country by waging a continuing battle against quacks and charlatans and their nostrums and gadgets. It maintains the nation's most complete quackery files, containing more than one million references, and has effectively used this information to educate Americans against falling prey to those who capitalize on illness.

Recognizing that quacks and charlatans thrive in the dark shadows of public ignorance, the AMA has used the media of newspapers, magazines, radio and television to put the public on guard. AMA-produced exhibits and films, plus lectures by staff members, are also employed in the education program aimed at both physician and laymen.

Despite such efforts, however, and regardless of the intense campaigns of such enforcement agencies as the Food and Drug Administration, the Federal Trade Commission, the Post Office Department and state medical boards, medical quackery continues to feed on the gullibility of otherwise well-informed people, who waste millions of dollars annually on fake cures and cure-alls. Worst of all, many victims delay seeking competent care until they suffer permanent injury to their health.

As an example of the scope of the problem, Americans are now spending $250 million annually on fake arthritis and rheumatism cures. Cancer quackery, most notorious crime of all, annually reaps $100 millions for its cruel promoters. While over-the-counter vitamins may not fall strictly within the definition of quackery, they nevertheless represent a $350 million annual layout of questionable worth.

To Catch a Quack

To meet the ever-increasing challenge, the AMA has stepped up its activities in recent years. Now, it stands on the brink of launching a new and even more vigorous attack on health care charlatans, inaugurating the effort by staging the First National Congress on Quackery this month in Washington, D.C.

Arranged in cooperation with the Food and Drug Administration, the meeting was designed to focus the national spotlight on medical skullduggery. At this writing, the final outcome of the conference cannot be reported, but it is expected that participants will recommend ways and means of establishing closer liaison between Federal and local programs of enforcement, with particular emphasis on clearing up false and misleading advertising. For its part, the AMA Department of Investigation has already laid plans to increase its liaison and supportive activities with state medical societies. In addition, an information program is planned for educational institutions.

Quackery and Quacks

Counterfeit doctors have become specialized. Their major divisions of activity include: Mechanical quackery (promotion of devices and gadgets for the diagnosis and treatment of all human ills—some popular items are illustrated on the facing page); nutritional quackery (door-to-door diagnosis specialists, who believe all ailments are caused by improper eating, and who offer their "patients" bizarre foods or food supplements with "guaranteed" across-the-board curative powers); and last but not least, the cancer quacks, who use a variety of techniques to profit from distraught individuals who have, or think they have, cancer.

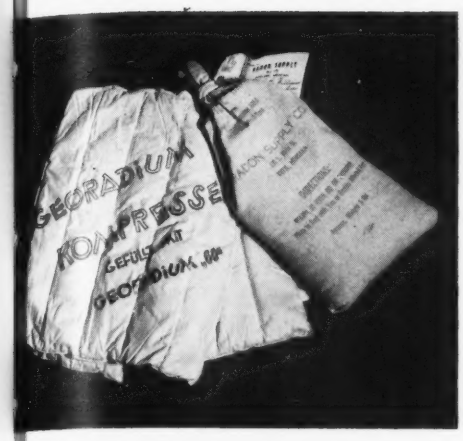
For the most part, medical quacks are uneducated confidence men, successors of the wandering medicine man of earlier days, and equally successful in keeping one step ahead of the law. Others are licensed renegades in one of the branches of the healing arts. Regardless of their educational level or status of licensure, all have one thing in common—they are slippery.

In all of its educational literature on the subject, the AMA has warned the public to beware of phonies who—

- Use special or "secret" machines or formulas.
- Guarantee quick cures.
- Advertise or use case histories and testimonials to promote their cures.
- Clamor constantly for medical in-

(Continued on Page 572)

Products of Quackery

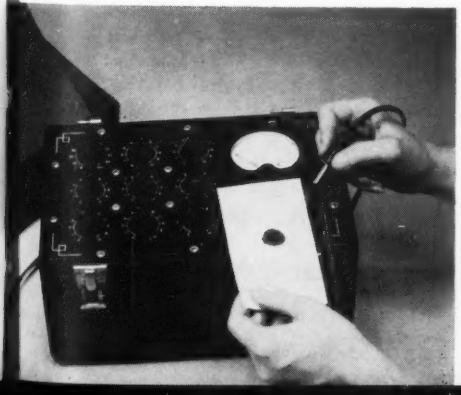


RADIOACTIVE ORE: Claims are made that devices filled with radioactive ore will cure many chronic diseases, especially arthritis and rheumatism. Geiger counters show that such devices are usually less radioactive than the luminous dial of a wristwatch. Bags, pads, mattresses, pillows, cabinets, uranium mines, tunnels and ditches are promoted.

RADIOCLAST: The quacks who use the Radioclast say it can detect "vibration rates" of body organs and diseases. They claim they can diagnose by "tuning in" and treat by "normalizing" vibrations. Like similar "radionic" devices, it has been examined by scientific and electronic experts and branded fraudulent.

DEPOLARAY: The Depolaray has been represented as effective in the treatment of more than 100 diseases. Government reports reveal it is essentially a weak electromagnet. It is often used in connection with a mail order diagnostic scheme. In 1954 a federal court decree banned interstate shipment of the Depolaray.

SPECTRO-CHROME: Dinshah P. Ghadiali invented the theory that good health could be retained or regained through "attuned color waves." Then he invented a machine to do the "attuning." It was the Spectro-Chrome. A metal box on a stand houses a 1,000 watt light bulb. Panes of colored glass slide in front of the bulb—different colors "treat" different diseases. Ghadiali's victims had to join his Institute and pay a $90 membership fee in order to get the machine—free.



DROWN INSTRUMENTS: Chiropractor Ruth B. Drown promoted several "radio vision" and "homo-vibra ray" instruments she claimed could diagnose and treat illness. "Emanations" from a blood spot on file with the practitioner are supposed to permit "absent" treatments. In 1951 Ruth Drown was found guilty of violation of the federal food and drug law for causing a misbranded instrument to be introduced in interstate commerce. She was fined $1,000.

(Continued from Page 570)

vestigation or recognition.

- Claim medical men are persecuting them or are afraid of competition.
- Say surgery, x-rays and drugs will cause more harm than good.

Notable Accomplishments

Throughout its history, the AMA Department of Investigation has established an impressive record in its anti-quackery activities. The list of victories resulting from its cooperative investigations with law enforcement agencies reads like a "Who's Who of Medical Quackery."

In 1936, the Department exposed the infamous John R. Brinkley who, among other things, claimed to rejuvenate elderly men with goat glands. In 1953, after four years of work, the Department was successful in forcing the retirement of Jacob Sass Schirmer. Passing himself off as a physician, Schirmer was promoting the quack treatment of cancer and leukemia by recommending the inhalation of bacteriophage.

More recently, the AMA was instrumental in closing down the Hoxsey cancer operations, but only after the fakery bled its victims for over $50 million in worthless treatment.

Other AMA investigations have brought beneficial results, but the key to the whole problem lies in a concerted grass roots attack on quackery. If citizens will rise up and quickly stamp out charlatans at the community level, before they gain momentum, the AMA and Federal enforcement agencies will have a much easier task. Oliver Field, Director of the AMA's Department of Investigation has said, "Although we have been reasonably successful in our national campaign against quackery, we must not stand pat, or even settle for the status quo. To work toward the ultimate goal of abolishing quackery, we must gain the complete support of state and county medical societies and their local governments."

The Oklahoma Scene

Oklahoma has not been without its share of medical shenanigans. AMA files contain histories of several local quacks who were subjects of Food and Drug Administration activity, among them Tom G. Sanders, formerly of Wanette, who marketed a product consisting of ground hoof. horn, or other external animal growth suspended in diluted milk. The "cure" was recommended for everything from cancer to gas-on-the stomach.

Sanders was ordered to stop shipping his material in interstate commerce, and later was fined $500 for violating the injunction. Although Sanders himself is now deceased, recent reports indicate that his daughter and son have revived the same old racket.

What can be done about health care quacks who operate within state boundaries and thereby escape the jurisdiction of Federal authorities? Bill Harkey, attorney for the Oklahoma State Board of Medical Examiners, has this to say:

"I believe the present Oklahoma laws are adequate, but the enforcement of them could be improved. Since the key man in the enforcement of all laws is the county attorney, physicians in every county medical society must see to it that attorney is kept well-informed on medical goings-on. And while they are at it, it would help matters considerably if more county societies would make a direct effort to establish good rapport with this key law enforcement officer, even to the extent of offering election campaign support."

Harkey explained that the Board of Medical Examiners is somewhat limited in its enforcement power. "We can seek injunctions against non-licensed persons masquerading as physicians," he said, "but, if the offender violates the injunction, as frequently happens, criminal contempt proceedings must be handled by the county attorney."

Physicians who discover evidence of medical quackery, whether being performed by laymen or licensed practitioners, should contact the county attorney, supplying details and the names of witnesses. If witnesses are reluctant to testify, the county attorney may subpoena them and take written statements without divulging where he obtained their names.

"The Board and most county attorney offices are not staffed to the extent they can survey all medical practice activities in the state," Harkey concluded, "so we must rely heavily on the cooperation of physicians at the community level." **See President's Letter, this issue, for further suggestions.** □

Medical Aspects of American Habits Topic For AMA Meeting

Every physician is well aware that the personal and group habits of his patients in their everyday lives have a profound effect on the health of the individuals.

A group of Denver physicians, plus a colleague from Wyoming, will present a study of medical aspects of American habits as a highlight of the program of the 15th annual clinical meeting of the American Medical Association, November 26-30 at Denver.

William Covode, M.D., of Denver is chairman of the section. The program will include such topics as "The Coffee Break," by E. Chester Ridgway, M.D., Cody, Wyoming; "The Psycho-Stabilizers," by Jack O. Stoffel, M.D.; "Psycho-Sexual Aspects," by Bradford Murphey, M.D.; "The Pet in the House," by Francis T. Candlin, D.V.M.; "Automobile Driving," by Horace E. Campbell, M.D., and "The Cocktail Hour," by Clyde E. Stanfield, M.D.

Chemotherapy in cancer, an area in which knowledge is growing rapidly, will be another important feature of the clinical meeting program.

Subjects in this area will include "A Survey of Chemotherapeutic Agents in Malignancy," "Chemotherapy of Leukemia and Malignant Solid Tumors in Children," "Chemotherapy as an Adjuvant to Cancer Surgery," and "Enhancement of Radiotherapy by Oral Methotrexate." □

Board of Trustees to Meet October 22

President Clinton Gallaher, M.D., has called a meeting of the OSMA Board of Trustees for October 22nd at the association headquarters building. The meeting, first since Gallaher took office last May, is expected to clear the way for several new association projects, as well as to provide an opportunity for reporting on other medical organization activities.

Highlighting the meeting will be the inauguration of the association's Medical Education Encouragement Program, approved by the House of Delegates last Spring and now made ready for implementation by the Medical School Liaison Committee.

According to Gregory E. Stanbro, M.D., committee chairman, the Trustees will be asked to get the program started; a program designed to interest a greater quality and quantity of highschool students in the pursuit of careers in medicine. The plan calls for the appointment of medical education counselors for each highschool of the state. Physicians serving as counselors will appear before highschool science and premed clubs to provide students with facts about medical careers, with particular reference to the University of Oklahoma School of Medicine.

A folder on the subject, prepared by Stanbro's committee and the medical school, will be made available to all interested highschool students. "The whole idea," Stanbro said, "is to meet growing competition from industry, and attract the best possible students for our medical school."

In addition to the medical education program, other agenda items include: Reconsideration of Blue Shield Coverage for Physicians; Report on Annual Meeting Plans; The Reorganization of OSMA Fiscal Policies and Procedures; Ratification of Appointment to the Editorial Board; Association Sponsorship of Selected Essay Contests; Reports from AMA Delegates and Alternate Delegates; Progress Reports from Selected Council and Committee Chairmen; and, Consideration of OSMA Plans for the Clinical Meeting of the AMA, slated for November 26-30 in Denver.

"I am hopeful that this meeting of the Board of Trustees will set the stage for a productive year of association activities," Gallaher said. □

12th Annual Conference on Disaster Medical Care to Be Held in Chicago

The 12th County Medical Societies Conference on Disaster Medical Care will be held in Chicago, November 4-5, at the Palmer House.

Gifford Henry, M.D., Tulsa, Chairman of the OSMA's Disaster Medical Care Committee is encouraging county society civil defense chairmen to make the trip. "Increased national civil defense interest, in the wake of intensifying world problems, gives us an opportunity to take advantage of the momentum and really get something done at the local level," he said.

"A How Do You Do It at the County Level" is the basic theme of the national meeting which is sponsored by the Amercan Medical Association's Council on National Security.

The two-day conference will be divided between symposiums and regional workshop sessions. One symposium will be devoted to "The County Medical Society and Disaster Medical Care." A second will include pertinent topics under the general heading of "Training of Allied Health Professions and Services." Regional workshop groups will have a wide variety of topics for discussion designed to acquaint the participants with disaster planning at the city, county, state and relional levels.

Write OSMA for details. □

Progress Made on Annual Meeting

Encouraging reports from J. R. Stacy, M.D., General Chairman, and Rex Kenyon, M.D., Program Chairman, indicate that the OSMA's 1962 Annual meeting scheduled for May 5, 6, and 7 in Oklahoma City, will be one of the association's finest. A diversified program, improved meeting facilities and a public "Town Hall" meeting featuring movie star Ronald Reagan will highlight innovations in store for registrants. The meeting is labeled by planners as a "Three Ring Circus" of scientific, socio-economic and social activities.

All scientific and social events will be held in the Skirvin Hotel and Skirvin Tower, rather than using the customary facilities of the Municipal Auditorium. The convenience of having most activities in the same location is expected to increase attendance to the scientific program. Also, the weekend meeting dates were selected to enhance good attendance.

Scientific and socio-economic presentations will be offered in three separate meeting rooms, with the programs running concurrently. The large Venetian Room of the Skirvin Hotel will accommodate lectures from eleven distinguished speakers, and the Monterey and Regency Rooms will house presentations on scientific subjects of special interest as well as discussions of socio-economic matters.

Specialty societies are now selecting the guest speakers. Those confirmed to date are: Robert A. Aldrich, M.D., University of Washington—Pediatrics; Irving Ariel, M.D., New York City—Surgery; James H. Ferguson, M.D., University of Miami—OB-Gynecology; Willard E. Goodwin, M.D., University of California—Urology; Robert Kierland, M.D., Mayo Clinic — Dermatology; Lawrence J. McCormack, M.D., Cleveland Clinic—Pathology; and Malcom H. Stroud, M.D., St. Louis—E.N.T. Additional speakers will represent the fields of surgery, psychiatry and internal medicine.

(Continued on Page 574)

(Continued from Page 573)

Reagan will appear at the Municipal Auditorium Sunday evening, May 6th, to address a public gathering of an expected audience of 3-4,000. A well-known conservative, he may be counted upon to attack socialism in general, and socialized medicine in particular. □

Postgraduate Committee Announces Eight Courses

Oklahoma physicians will have top-quality postgraduate education delivered to their doorsteps this year—through a program announced September 20th by R. R. Hannas, M.D., Sentinel, Chairman of the OSMA's Committee on Postgraduate Education.

The plan calls for eight decentralized refresher courses on principal organ systems of the body. Patterned after three pilot courses held last year in Ponca City, Lawton and Muskogee, the programs will feature four hours of lecture and discussion, pleasantly divided by a social hour and dinner. Four instructional teams are now being selected by Hannas' committee for the eight regional meetings. Subjects selected for the teams are: "The Liver," "The Kidney," "The Colon," and "The Lung."

Meeting sites selected and the subjects to be presented are: Enid ("The Lung"); Bartlesville ("The Liver); Chickasha ("The Kidney"); Ardmore ("The Kidney"); Ada ("The Liver"); Fort Gibson ("The Colon"); Miami ("The Lung"); and Burns Flat ("The Colon.").

Physicians within a fifty mile radius of the meeting sites will receive invitations and official programs in advance of the meeting. Registration fee for the meetings, which includes the social hour and dinner, is $7.50.

"These regional courses are designed to offer subject matter of general appeal," Hannas said, "and we have tried to select meeting sites which will make the programs conveniently available to most physicians." □

Oklahoma City Clinical Society Will Meet October 23-25, 1961

Final plans have been drafted for the Oklahoma City Clinical Society's thirty-first annual three-day fall meeting. Activities will begin October 23, 1961 at the Sheraton-Oklahoma Hotel.

The postgraduate teaching program will include discussions and lectures in diversified fields of medicine by fifteen noted physicians. Specialty lectures, a clinical pathologic conference, daily roundtable luncheon question and answer sessions will be in addition to the general assemblies.

Featured Speaker

The Oklahoma County Medical Society will host guest lecturers and out-of-town physicians at a banquet on Monday evening, October 23. Principal speaker for the evening will be James Q. du Pont, nationally known lecturer and administrative assistant of the E. I. du Pont de Nemours & Company, Wilmington, Delaware. Topic for Mr. du Pont's talk will be "Pattern for Success."

A social hour on Tuesday evening will be followed by eight specialty group dinners, honoring the guest speakers. Members and associate members may attend the group dinner of their choice.

Each year, the Oklahoma City Chamber of Commerce honors the Oklahoma City Clinical Society and its visiting members with a dinner-dance. This will be held on Wednesday evening in the Persian Room of the Skirvin Tower Hotel.

Guest Speakers

Appearing before the conference this year will be: Ivan D. Baronofsky, M.D., Clinical Professor of Surgery, University of Southern California School of Medicine, San Diego; Edwin W. Cocke, Jr., M.D., Assistant Professor of Otolaryngology, University of Tennessee College of Medicine, Memphis; Bentley P. Colcock, M.D., member of the Surgical Staff, Lahey Clinic, Boston, Massachusetts; Charles W. Daeschner, Jr., M.D., Professor and Chairman of the Department of Pediatrics, University of Texas Medical Branch, Galveston; Douglas M. Haynes, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, University of Louisville School of Medicine, Louisville, Kentucky;

Walter M. Kirkendall, M.D., Director of the Cardiovascular Research Laboratories, State University of Iowa Hospitals, Iowa City, Iowa; Charles P. Larson, M.D., Assistant Clinical Professor of Pathology, University of Washington Medical School, Tacoma, Washington; E. Perry McCullagh, M.D., Head of the Department of Endocrinology and Metabolism, Cleveland Clinic Foundation, Cleveland, Ohio; Donn G. Mosser, M.D., Professor of Radiation Therapy, University of Minnesota Medical School, Minneapolis;

Robert E. L. Nesbitt, Jr., M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, Albany Medical College of Union University, Albany, New York; Edward W. D. Norton, M.D., Professor and Chairman of the Department of Ophthalmology, University of Miami School of Medicine, Miami, Florida; Donald L. Rose, M.D., Professor and Chairman of the Department of Physical Medicine and Rehabilitation, University of Kansas School of Medicine, Kansas City;

Ian M. Thompson, M.D., Professor and Chairman of the Department of Urology, University of Missouri School of Medicine, Columbia, Missouri; Charles E. Wells, M.D., Associate Professor of Medicine (Neurology) and Chairman of the Division of Neurology, Vanderbilt University School of Medicine, Nashville, Tennessee; and Jack K. Wickstrom, M.D., Professor and Chairman of the Division of Orthopedic Surgery, Tulane University School of Medicine, New Orleans, Louisiana.

The three-day conference is acceptable for 18 hours of Category 1 Credit by the American Academy of General Practice. □

Forensic Meeting Lays Groundwork for Medical Examiner Law

All Oklahoma physicians are encouraged to attend an October 22nd forensic medicine seminar, to hear Seattle pathologist Charles P. Larson, M.D., discuss the proper method of conducting a medical-legal examination. Sponsored by the Oklahoma Association of Pathologists, the meeting is designed as an introductory course for physicians interested in becoming county medical examiners, as provided by Oklahoma's new Medical Examiner Act.

The two hour session will be held at 3:00 p.m. Sunday, the day preceding the opening of the Oklahoma City Clinical Society Meeting, in the main auditorium of the O.U. School of Medicine. Raymond F. Hain, M.D., Oklahoma City pathologist, is in charge of planning.

Role of Examiners

The Oklahoma Medical Examiner Act, long-sought by organized medicine and law enforcement officials, becomes effective January 2, 1962. Commonly called the "unexplained death bill," the act is designed to supplant the present antiquated coroner's court with a more scientifically-sound system of state and county medical examiners.

A state medical examiner, operating under the direction of a Board of Unexplained Deaths, will be responsible for the medical investigation of: violent deaths; sudden deaths of apparently healthy persons, when the cause is not readily recognizable; deaths under suspicious, unusual or unnatural circumstances; and deaths from diseases which menace public health. To accomplish this mission, the state examiner will appoint a county medical examiner for each county of the state.

The county examiner, upon being notified, will immediately investigate such deaths and report his findings to the state examiner. Autopsies may be ordered when warranted, subject to the receipt of necessary authorization from either next-of-kin, the county attorney, or the District or County Courts.

CHARLES P. LARSON, M.D.

"Now that we have been successful in obtaining legislation for the handling of unexplained deaths," Doctor Hain said, "the medical profession must prepare itself to properly carry out the important function of medical investigation. The October 22nd meeting will give us an opportunity to hear from a national expert in medical-legal problems and, at the same time, lay the groundwork for effective implementation of the Medical Examiner Act. I hope every county medical society will have a representative present at the meeting." □

Doctor Diplomats

Five physicians from Tulsa, Oklahoma, members of the First Presbyterian Church of Tulsa, are giving up their practices for six-week periods to serve voluntarily at the Miraj Medical Center in Miraj, India.

Doctor C. S. Lewis, one of these five Tulsa physicians, recently reported to the AMA on the progress of the project labeled "Doctors in Asia." Other physician-participants are: George R. Krietmeyer, M.D., William C. Pratt, M.D., Maxwell A. Johnson, M.D., and Dale E. Newman, M.D.

The first of the group of volunteer physicians; Doctor Lewis flew to Miraj in mid-August. He will return at the end of September and the next doctor will make the trip. In all, the five physicians will donate a total of thirty weeks to the program. The project is endorsed by the Tulsa County Medical Society. Funds for medical equipment, transportation and other expenses were raised through church and public contributions.

Other groups of American physicians are also becoming interested in the possibility of initiating a similar venture in their own communities. For example, several doctors met with Doctor Lewis during his AMA visit to discuss the feasibility of adopting an overseas program which would provide medical care to another area of the world equally in need of such assistance.

Still another example of American physicians demonstrating their interest and willingness to serve in foreign mission fields on a temporary basis is shown by the large number of doctors who have written to the AMA Department of International Health in the last few months to inquire about such service. This new Department administers a program approved last June by the AMA House of Delegates whereby members of the AMA may volunteer for service in the foreign mission fields on a temporary basis when emergencies arise. Cooperating with AMA in this program are missionary agencies representing every denomination sponsoring American medical missionaries.

Physicians interested in volunteering for such service are asked to write directly to the AMA Department of International Health, 535 N. Dearborn Street, Chicago 10, Illinois. □

Cost of Care Booklets

County medical societies may order copies of the AMA's new booklet "The Cost of Medical Care" by writing to the OSMA Executive Office. Two copies of the publication are available for each county society member. The 15-page booklet graphically presents a statistical analysis of the health care dollar as compared to other costs of living. □

OU Medical School Enrolls 104 Students

A new first year class of 104 men and women started studies September 11 at the University of Oklahoma School of Medicine.

The new medical students:

Donald Claude Bailey, Stroud; Charles Walker Barbee, Antlers; Jonne Louis Barney and Tom H. Garrett, Anadarko; Shelba Jean Bethyl, Gans; Curtis Owen Bohlman and Arnold Earldo Branch, Watonga; James Donald Brashear, Stilwell; Stanley Fred Brunn, Brooklyn, New York; Bob Lee Bruton, Hartshorne;

Jerome Lloyd Borochoff, Jeffrey Howard Cohenour, David V. Eakin, James Clifford Henry and Richard P. Tucker, all of Tulsa; Twilah Fox, Bixby; John B. Freidenberger and Paul Lewis Nave, Enid; Dale Ralph Butler and Lyle Benjamin Cartwright, Norman; Ronald Alvan Callicott, Joseph Laurent Krueger and Delmer Dee Raibourn, Lawton;

Robert Joe Capehart, Muskogee; Robert Paul Carter Jr., Tonkawa; Charles Franklin Coker and Jon Dalton Tillinghast, El Reno; Phil Douglas Craft, Hugo; Ronald I. Cramer, Elmwood; Aaron Cornwell Elliott, Vian; Charles Tandy Folsom, Marietta; Eldon Van Gibson, Tahlequah; Leslie Robin Gross, New York, New York;

Manuel Hensley, Bethany; Robert C. Hoffman, Newkirk; Martin R. Hullender, Frederick; Richard Lee Hunter, Spiro; Melvin Price Hutts, Vinita; Jimmie Keith Jackson, Healdton; Donald Franklin Johnson, Inola; Ray Monroe Johnson, James Franklin Todd and Ildiko Margit Sandford, Stillwater; Roy Dewitt King, Midwest City; Patrick David Lester, Broken Arrow; Larry Wayne Magnuson, Alva;

Donald Eugene McHard and Jon Thomas Willis, Blackwell; Thomas Richard Medlock, Fitzhugh; Don Wesley Meinders, Pauls Valley; James Earl Milton and Jack Irion Pickren, Shawnee; Burt Chesley Montague, Elk City; Kirk Thornton Mosley Jr., Noble; John Gail Henry Neely, Edmond; Thomas Clinton Neese, Seminole;

Robert Richard Pavlu, Waukomis; Dennis George Pennington, Midland, Texas; John Kendrick Pirtle, McAlester; Charles Robert Plank, Fairview; Kent Hardie Potts, Wellston; Phyllis Maria Pyrum, Durant; Gary Wayne Rahe, Crescent; A. J. Reed, Kiowa, Kansas; Jimmie Lee Reed, Nowata; Sam Ted Reyes, Wewoka;

Thomas Ryan Russell, Meeker; Mary Louise Saddoris and Gary L. Shepherd, Bartlesville; Harley Joe Scholz, Red Rock; Stanley Allen Skaer, Augusta, Kansas; Richard Beil Stice, Odessa, Texas; Garry Franklin Strebel, Okay; Leaford Thornbrough, Clinton; Mark Tong, Seoul, Korea; Carroll LeRoy Zahorsky, Carmen;

Robert Carlton Arnold, Vander Michael Barket, George Newton Barry, Charles V. Blair, John Russell Bozalis, Robert Wayne Carson, Jerry Alan Cook, Beverly Dale Dodson, Theodore Henry Fortman, Stephen Samuel Haas, Abbas Eqbal Kitabchi, Rex Roland Matthews, James Finley McMurray, Jr., Nicholaas Lingen Meiring, Donald Dee Mitchell, Germaine Louise Petty, Georgia Rae Prentice, Kenneth Gerald Presley, Frederick William Schacht, Jr., Teresa Marie Stacy, Nicholas James Stephanou, Rex E. Stockard, Donald Lee Tutt, Bruce McMillan Van Horn, James Edward Walraven, Marvin Weisbard, David Parker West, Harriet Joellen Wildman, all of Oklahoma City. □

District II Holds Annual Dinner Meeting

Fifty physicians and their wives from Trustee District II of the Oklahoma State Medical Association braved the torrential aftermath of Hurricane Carla to gather at the Cushing Country Club on September 12th for their annual district society dinner meeting. The traditional business-social event drew attendance from Payne, Pawnee, Kay, Noble and Osage county medical societies.

OSMA President Clinton Gallaher, M.D., Shawnee, was the principal speaker for the evening. Doctor Gallaher called attention to some of the broad, major projects facing organized medicine for the coming year, then focused the discussion on the "Five Point Program" he plans to carry out in addition to the regular projects. A medical law familiarization program for Oklahoma licensees, socio-economic indoctrination courses for new members, improved postgraduate education programs, medical career counseling at the highschool level, and financial assistance to medical students were named as "points" for association action.

In addition to Doctor and Mrs. Gallaher, other honored guests included: Mrs. W. Pat Fite, Sr., state auxiliary president, and Doctor Fite, Muskogee; and, Mrs. Milton Berg, auxiliary president-elect, and Doctor Berg, Tulsa.

George R. Smith, M.D., and Mrs. Clifford Bassett, both of Cushing, were in charge of local arrangements. Doctor Bassett presided during the dinner meeting.

Trustees for the district are G. B. Gathers, Jr., M.D., Stillwater, and A. M. Evans, M.D., Perry. □

After-Care Conference

The Oklahoma Association for Mental Health is sponsoring an After-Care Conference on Sunday, October 22nd. This conference will concern itself with follow-up care of patients discharged from our various mental institutions with particular emphasis on the role of the private physician in the community.

Doctor Dan Blain, Commissioner of Mental Health for the State of California, will be honored speaker at the panel discussion.

All physicians in the state are invited to be guests of the Association at 12 o'clock noon luncheon to be held at the 89ers Inn, 3300 North Lincoln, Oklahoma City. The conference will follow the luncheon. Physicians interested in attending the luncheon should contact Lester Hall, Executive Director, Oklahoma Association for Mental Health, 309 Municipal Auditorium, Oklahoma City 2, Oklahoma. □

Ciba Foundation Symposium on Congenital Malformations. Edited by G. E. W. Wolstenholme and C. M. O'Connor, pp. 320, Little, Brown and Company, Boston, 1960. Price $9.00.

This volume represents the proceedings of a symposium on congenital malformations held in London in January, 1960, under the sponsorship of the Ciba Foundation. Authorities from many different disciplines with a common interest in congenital malformations — genetics, biochemistry, pathology, anatomy, pediatrics, embryology, obstetrics, epidemiology— met to review various aspects of this major health problem and to bridge the gap between their respective fields. The value of the publication is enhanced by the printing of the discussion of each presentation, which is customary with Ciba Symposia.

A significant portion of the monograph is devoted to teratogens—tumor-inhibiting chemicals, actinonycin D. pteroglutamic acid deficiency, and environmental factors—in the production of congenital malformations in experimental animals. Woollam and Millen report their interesting experiments on the modification by cortisone, insulin and methylthiouracil of the known teratogenic effects of irradiation and hypervitaminosis A. A valuable contribution is the observations of McKeown and Record of Birmingham on various aspects of congenital malformations in a population observed for five years after birth. Of particular interest are the findings on the life expectancy of patients with various types of congenital malformations and on the incidence of association of various types of anomalies.

Penrose provides a very readable review of certain aspects of the genetic causes of malformations, which also serves to point up the large gaps in our present-day knowledge of this aspect of teratology. Ford reviews some of the more fundamental concepts of chromosomal abnormalities as they relate to congenital malformations. There is also a chapter on congenital runting and the possible implications of placental fusion and ovarian position in the production of human counterparts of this syndrome. Giroud reviews his work on the morphogenesis of anencephaly. The association of various maternal conditions, including "prediabetes," hypothyroidism and hydramnious, with various types of congenital malformations is liberally reviewed. The final chapter is a reproduction of the general discussion participated in by most of the symposium participants.

The binding, printing and photographic reproductions are of high quality. This monograph in book form is a valuable reference and provides an opportunity for those interested in congenital malformations to have at their disposal reviews of recent work of high quality on this subject.—*Harris D. Riley, Jr., M.D.* □

Ciba Foundation Colloquia on Endocrinology, Vol. XIII; "Human Pituitary Hormones." Edited by G. E. W. Wolstenholme and Cecilia M. O'Connor, pp. 336, Little, Brown and Company, Boston, 1960.

The editors of this book and the Ciba Foundation are to be congratulated on their accomplishment in bringing together some of the important up-to-date information covering the human pituitary hormones. The book is composed of a collection of papers given by a group of internationally famous investigators who were brought together to honor Professor B. A. Houssay. The first section deals with some interesting new radiological information covering the anatomy of the human pituitary gland which will undoubtedly prove to be of clinical importance. The remainder of the book deals with the various hormones of the pituitary gland; some of the procedures for preparation of these hormonal products and the chemical and biologic properties of these products are considered. The best part of the book, which consists of approximately one-half of the total volume, deals with growth hormone; the papers dealing with the metabolic actions of this hormone and methods of assaying this hormone in man are especially interesting. The next largest section considers the gonadotropins; some important advances are being made in the differential assay of follicle-stimulating hormone and interstitial-cell stimulating hormone which may be of importance in the understanding of the physiologic role of these hormones. ACTH and melanocyte-stimulating hormone have been isolated from the human pituitary gland; it has been shown that these two have similar aminoacid sequences in their molecular make-up. The final chapter is devoted to the assay of thyrotropic hormone in human blood; the data is interesting and promises to be of clinical significance. In conclusion it can be stated that this is a book which summarizes very well the latest information concerning the human pituitary hormones. It is strongly recommended for those interested in endocrinology. — *Doman K. Keele, M.D.* □

Blood Diseases of Infancy and Childhood. Carl H. Smith, M.D., the C. V. Mosby Company, 1960, pp. 572. Price $17.00.

This book is a well organized textbook of those hematologic disorders of infancy and childhood seen by either the general practitioner, pediatrician or hematologist. The problems are presented against a background of normal growth and development. The general considerations of normal myelopoiesis are well presented and attention is given to those disorders of infants caused by or intimately related to maternal-fetal abnormalities. Specific types of anemias are presented in a methodical and orderly manner. Cur-

rent concepts of the pathogenesis of each type of anemia are discussed fully. The clinical manifestations and pertinent laboratory procedures necessary for the diagnosis of these disorders are included. The treatment of each anemia is presented in an intelligible and rational way. If specific treatment is available, the preparations, mode of administration and expectations are mentioned. If supportive therapy is all that is available, the acceptable management is outlined. Chapters on the hemoglobiopathies and clotting disorders are included in the light of present knowledge. Bibliographical information is very good. I would highly recommend this book to all interested in pediatrics and hematology.—*Ted Clemens, Jr., M.D.* □

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